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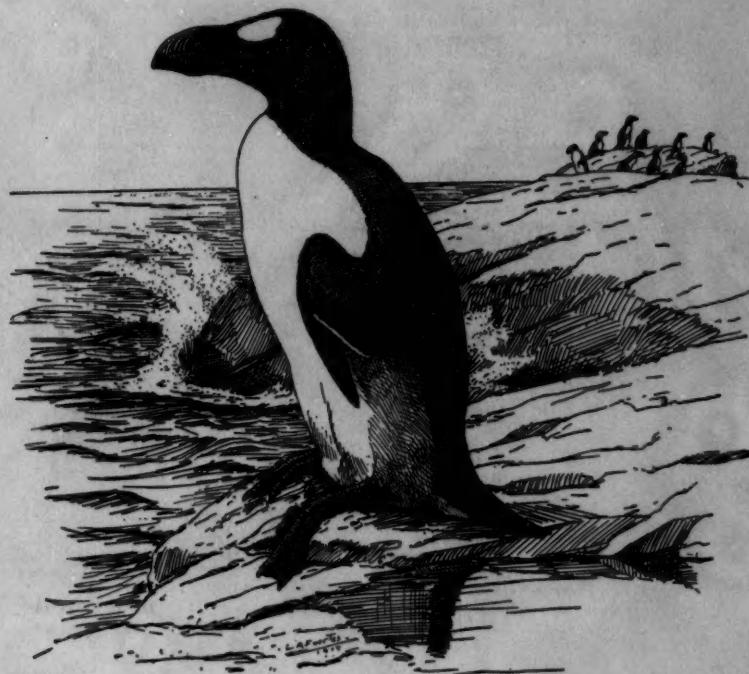
# The Auk

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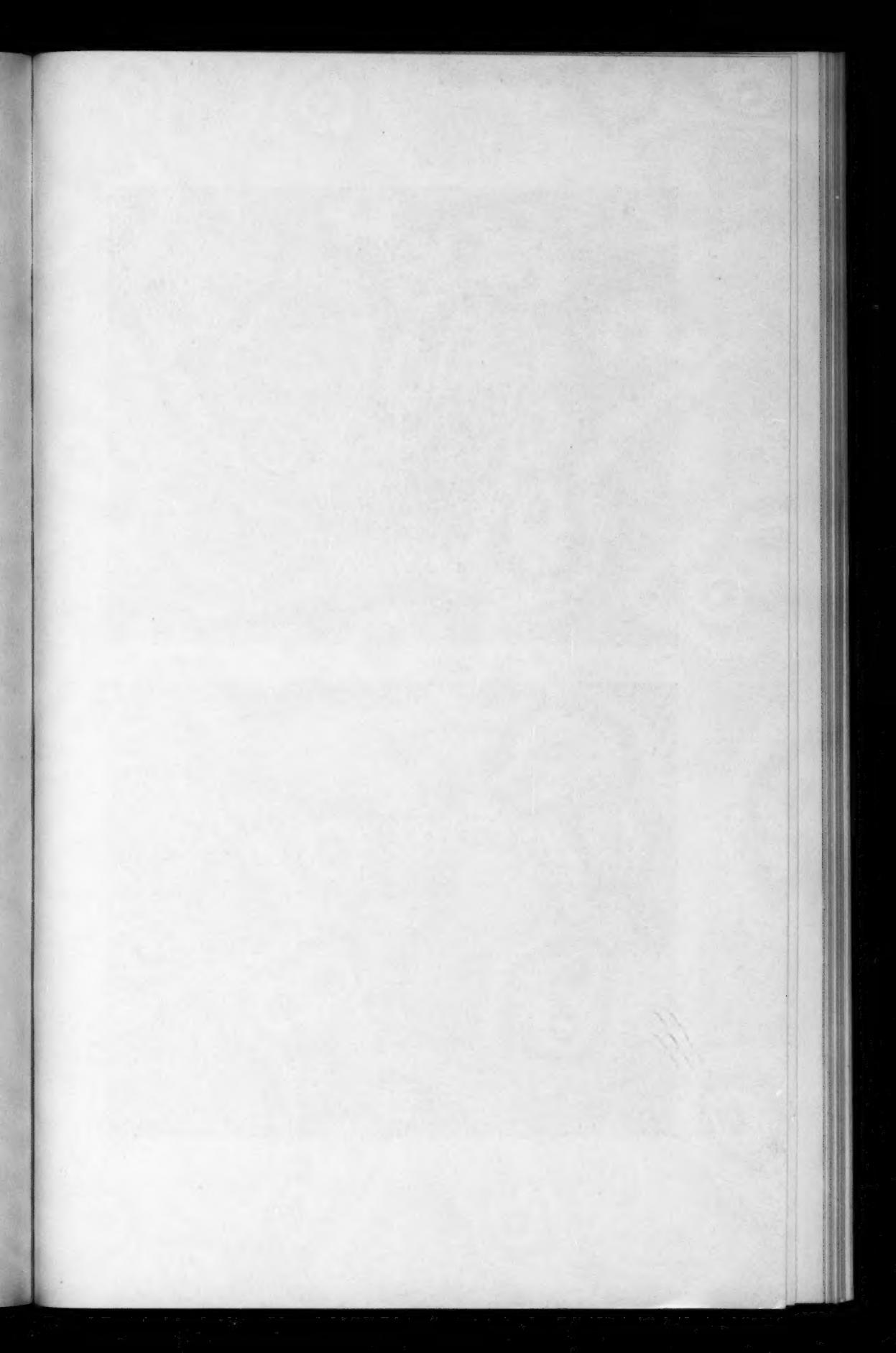
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Photos. by H. Mousley.

SHORT-BILLED MARSH WREN AT NEST.

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## A STUDY OF THE HOME LIFE OF THE SHORT-BILLED MARSH WREN (*CISTOTHORUS STELLARIS*).<sup>1</sup>

BY HENRY MOUSLEY.

### *Plate XIV.*

IN view of the general paucity of information regarding the exact distribution, breeding range, and home life of the Short-billed Marsh Wren, it is hoped the present contribution may not come amiss.

I first became acquainted with this Wren, at Hatley, Quebec, on May 21, 1917,<sup>2</sup> when I obtained a sight record of a bird in a damp meadow much overgrown with long grass, on a farm about one mile to the north of the village. Two years later, on September 10, 1919,<sup>3</sup> I fortunately secured a specimen three miles south of the previous site, this record being the first published one for the species in the Province of Quebec, although, it afterwards transpired, that it had been observed by my friend Mr. Terrill,<sup>4</sup> near Montreal, in 1911, but nowhere recorded at the time. Several years later, on July 7, 1926, I accidentally trod on a young bird just out of the nest, at Lanoraie, Que., about fifty miles north of Montreal.

Both the skin of this bird, and the one shot at Hatley, are now in the National Museum at Ottawa. Since coming to reside in

<sup>1</sup> Read before the American Ornithologists' Union, Semicentennial Anniversary, New York, Nov. 16, 1933.

<sup>2</sup> Auk, vol. xxxv, 1918, p. 305.

<sup>3</sup> Auk, vol. xxxviii, 1921, p. 55.

<sup>4</sup> Auk, vol. xxxix, 1922, pp. 112-15.

Montreal, several breeding sites have been visited from time to time, in the country surrounding the city, but owing to the secretiveness of the birds, and the difficulty in locating their nests, no attempt has been made to study the bird intensively, until the season of 1933, when an opportunity presented itself near St. Hubert, Que., a locality on the south side of the St. Lawrence River, and within easy distance of the city.

It was early in June, that a male of the species was observed—on several occasions—singing over a narrow strip of ground, eighty yards long by forty yards wide, covered with coarse herbage, rushes, and sedges, bounded on the north and south by cattail beds, on the west by a railway embankment, wide ditch, and bed of cattails, whilst on the east side, there was another smaller ditch with cattails, the intervening space being cross-drained, thus forming an ideal spot for the Wrens, as well as for myself, the area not being too large for successfully working. Not believing in unlucky numbers, I commenced operations on the thirteenth of the month, by secreting myself whilst watching the male as he sang from various points of vantage. It was not long before I discovered that he had three favourite bushes, from which he sang repeatedly, but it took some time before I eventually made up my mind which was the real favourite, and the one near which I hoped to find the nest. This was a dead thorn bush, within nine feet of which I soon found what I took to be a half-completed nest, the other two "singing" posts, being choke cherry bushes, one twenty-one, and the other twenty-seven feet, from the nest. Strange to say, no sham or false nests were located, either on this, or any other date.

I allowed four days to go by before again visiting the site, on the 17th, when I concluded the nest would be about finished. This proved to be the case, for on visiting it the next day, the first egg had been laid, with an additional one each day until the 24th, when the nest contained its full complement of seven eggs, no more being laid afterwards. It was not until July 8, that the young hatched out, the time in this case being fourteen days, the first record of the incubation period that I have so far been able to find. By this time, the rank herbage which in addition to the rushes and sedges—already mentioned—consisted for the most part of golden-

rod, had grown considerably since I first found the nest, so that by now, it was three feet in height, the nest being only two inches off the ground, and as if to make matters worse, the opening to it, faced northeast, so that the sunlight, even in the early morning, only reached one side of it. However, I made a start at picture taking on July 12, the young then being four days old, and very small at that, besides being almost hidden in the cattail down, of which the nest was heavily lined, their eyes appearing only through very tiny slits, so that the resulting pictures were not much to look at, they seldom are of very young birds. Three days later, I again visited the nest, obtaining some rather more interesting pictures of the young, the slits to whose eyes had now opened to their full extent, and as the light was better, I decided to try and obtain some of the parents at the nest. Much easier said than done, as I soon found out. To begin with, a lane had to be made in the tall herbage twenty feet in length opposite the nest, with a short length at right angles at the end of it, where I could hide and operate the shutter with a long release. This being accomplished, the worst part was yet to come, i. e., the laying down of the herbage in front of, and at one side of the nest, to let in as much light as possible, and so that it could be replaced again without leaving the nest exposed when I left. This was accomplished by pushing long sticks at short intervals into the herbage near the top, and then pressing them down, but by the time this was done, the light had become very indifferent, so that, even with the lens at its full aperture, I was only able to give an exposure of about one-tenth of a second, the resulting pictures of the female, owing to her exceedingly rapid and jerky movements, being nothing but a blurr. However, the experiment was productive of some very interesting facts concerning the home life of these very secretive little birds, during the six hours I spent with them. To begin with, it took little more than twenty minutes before the female became reconciled to the altered conditions and ventured to approach the nest, notwithstanding the fact that the camera was little more than two feet away. Altogether, the young were fed twenty-eight times in the six hours, or at the rate of once in every thirteen minutes, and this by the female alone, her partner contenting himself by always singing from his favourite station on the thorn bush, whenever

she approached the nest. My next visit was three days later, when I again took pictures of the young as well as of the female feeding them, the light on this occasion being somewhat better and allowing an exposure of one twenty-fifth of a second. The resulting pictures not being too bad although it was evident that an exposure of one-fiftieth of a second would have been better if all motion in this animated ball of feathers was to be stopped entirely. As on the 15th the female did all the feeding as well as keeping the nest clean, one of the pictures depicting her in the act of removing the excretory sac. The male again contented himself by accompanying his partner on her foraging expeditions and singing from the thorn bush as she fed the young. The song of the male never aroused the least enthusiasm in the young as did the "click" of the female on arrival near the nest, the young then becoming an excited and animated mass and incidentally putting me on my guard, since the female always made her approach from the back or side of the nest, and being so very small it was no easy matter, even with strong glasses, to detect her approach as she made her way mouse-like through the herbage. In fact I might here say that this has been the most difficult and trying study I have so far made of any bird, and I consider myself lucky in obtaining the pictures I have of the female feeding the young, which are probably the first ever to be presented of this particular phase in the home life of the species. At times it was only the song of the male that gave me any indication that his partner was near the nest, whilst at others I was more fortunate in observing her approach, as she flew just above the top of the herbage suddenly flopping down into it at some distance from the nest, when all trace of her would be lost until the actions of the young made me aware that she had arrived in the near vicinity of the nest, but where she would actually appear was another matter. Sometimes it was on top of the nest, sometimes at one side or the other, and yet again in front of it on the ground, her actions both then, as she slipped mouse-like through the grass, and whilst feeding the young, being more like an animated ball of feathers than anything else, making the release of the shutter at the right moment almost an impossibility. As showing her apparent disregard of the camera she on one occasion perched on a leg of the tripod.

The young on this occasion were fed entirely by the female at the rate of once in every fourteen minutes, during the six hours I was at the nest. So far I had refrained from handling the young for the reason that they were the most nervous youngsters I had ever seen, the least click of the shutter or any other slight noise or disturbance sending a shiver through their whole frame, which made a time exposure picture a very speculative affair. I have mentioned the fact of never having handled them, so that what took place on the 20th may not be ascribed to any interference of them on my part. Directly on my arrival they all, with one exception, left the nest as if shot out of it with a catapult, this being the thirteenth day after hatching. Losing no time I made frantic efforts to recapture some of them but all to no purpose, they simply faded away whenever I happened to catch a fleeting glance of one of them. Just imagine having to chase a mouse through thick herbage three feet high and you will get some idea of my efforts to secure one of these animated mites, which exactly resembled the color of the small dead leaves which lay on the ground at the foot of the golden-rod stems. After a time I gave it up as a bad business and set up the camera in the hope of obtaining some pictures of the female feeding the one young which, luckily, was still in the nest. It was fortunate I did so and risked giving an exposure of one-fiftieth of a second, the light being better than hitherto, as I obtained an excellent picture of the female with food in her bill, as she appeared at the nest, for the first and only time before finally succeeding in enticing this last youngster out into the wide world. Fortunately I managed to recapture it, and in so doing, found one of the others also, which gave itself away by a slight squeak. Placing both in a bag, I left them for a time to quiet down, but whenever I attempted to open the mouth of the bag, one would be out of it in an instant, before I could stop them and when recaptured, it was quite a business to hold both in one hand at the same time without injuring them owing to their wriggling and frantic endeavours to squeeze through my fingers. I shall never forget the time I went through in securing two pictures of one of them on top of the nest, and four others of both squatting in my cap, by which time they were about as much exhausted as myself, allowing themselves to be replaced in the nest where they

remained perfectly quiet, and eventually fell asleep. Arriving at the nest early the next morning they were still in it, but the moment I touched the herbage to have a look, they were out of it in a flash, but I managed to recapture one of them, and for a wonder secured four quite good pictures as it obligingly posed for a few seconds on top of the nest, before again making off, and this time I did not delay its departure. It was then fourteen days old and apparently the smallest and youngest of the family, little patches of natal down still remained on its head and back, more especially, the former, there being very little, if any in the case of the other bird. In addition to the natal down, the wings in their centers showed a small area in which the sheathing to the feathers had not yet burst. In no case, so far as I could judge, was there any indication of a pattern of white spots or pads on the tongue and palate of the young, as is the case in many other species, especially, young Cuckoos which excel in this respect.

As regards the streaking of the head and back in the nestling, if there really is any, as in the adult, it is certainly not pronounced; the feathers, especially on the head, seeming to be of an almost uniform color. In any event, it would be difficult to describe just the degree of this back streaking in so young a bird. According to the late Dr. Dwight, the young after the post-juvenile molt cannot be distinguished from the adult, and there is a complete spring molt. The nest, an almost globular structure with a small entrance hole on one side, was composed outwardly of narrow strips of dry cattail leaves whilst the inside lining consisted of a thick layer of cattail down and five white feathers of a Domestic Fowl. It was only two inches above the ground, at the foot of a clump of the common or soft rush (*Juncus effusus*), this being the more or less general situation. Its height was six inches, width five inches, whilst the inside diameter was three inches. The surrounding herbage consisted principally of lance-leaved golden-rod (*Solidago graminifolia*), Canada golden-rod (*S. canadensis*), intermixed with rushes (*Juncus effusus*) and sedges (*Scirpus rubrotinctus*), as well as clusters of asters (*Aster umbellatus*), and (*A. paniculatus*), spiked purple loosestrife (*Lythrum salicaria*), meadowsweet (*Spiraea salicifolia*), beggars-ticks (*Bidens frondosa*) and Roman wormwood (*Ambrosia artemisiæfolia*).

Summing up the results of this study, we find that it probably took at least seven or eight days, if not more, to build the nest; that, when this was finished, an egg was laid on each successive day until the clutch of seven was complete; that the incubation period occupied fourteen days, and that the young left the nest 13 days later. Their feeding—54 times in 12 hours, or once in every 13.33 minutes—being attended to entirely by the female, at least during the time I spent at the nest, but whether the neglect of the male in assisting to feed his offspring always holds good future studies will have to decide. As regards the arrival and departure of the species I find my earliest date, is May 21, and latest, September 11, although I fancy they often come a little earlier and leave somewhat later. In conclusion, it is hoped this paper may be the means of the Province of Quebec being included in the breeding range of this species in the next edition of the A. O. U. 'Check-List.'

4073 Tupper Street,  
Montreal, Canada.

## SWAINSON'S HAWK IN WASHINGTON STATE.

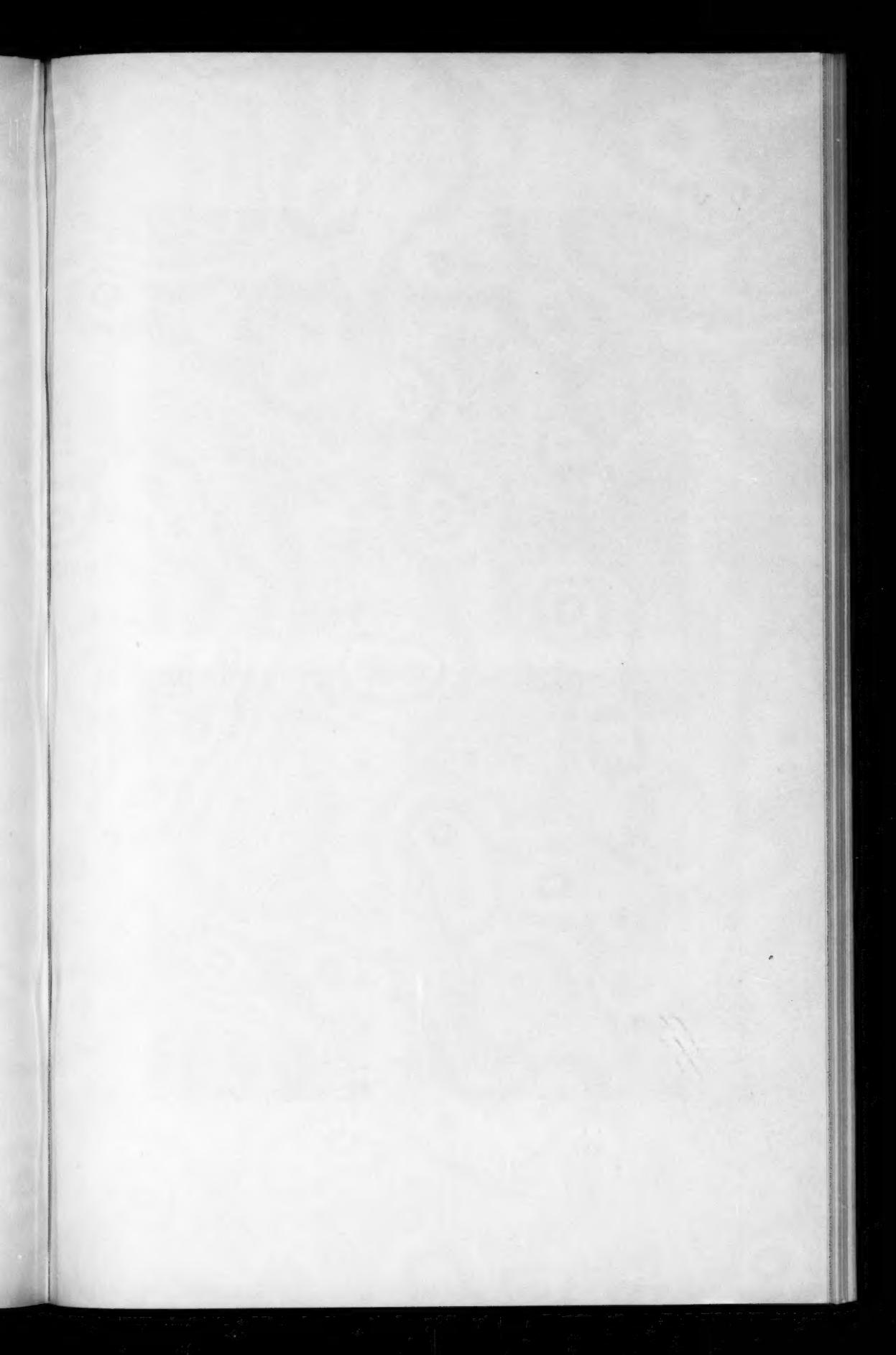
BY J. HOOPER BOWLES AND F. R. DECKER.

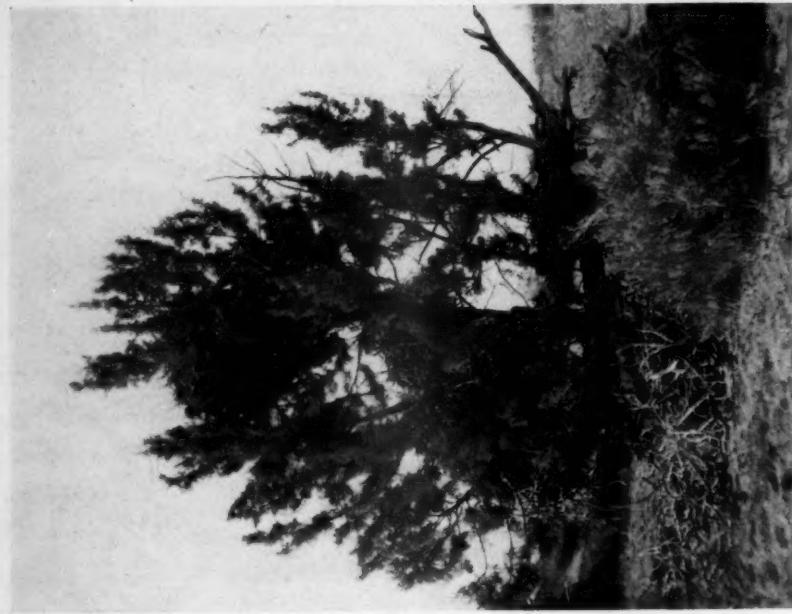
*Plates XV-XVI.*

THE Swainson's Hawk (*Buteo swainsoni*) is still one of the most abundant Raptore throughout many parts of eastern Washington, in spite of continual persecution by sheep herders and the so-called "varmint hunts" that are organized by certain sportsmen's organizations. Education as to the beneficial habits of this Hawk seems, for the most part, equally useless with either of the classes mentioned, although a few of the sportsmen are beginning to see the right side of the matter. The Cascade Mountains, which divide the coast district from what we term the "east side," seem to form a barrier over which many birds seldom or never cross. Strange as it may seem, in our thirty-seven years experience in this state we have but one record for this Hawk west of the Cascades. Incidentally, it may be of interest to add that we have no records at all for the Ferruginous Rough-leg (*Buteo regalis*) west of the Cascades, although it is by no means rare in certain localities on the east side during the summer. In fact, there are locations where the two species are so closely associated during the nesting season that it is impossible to give a full description of one without including the other.

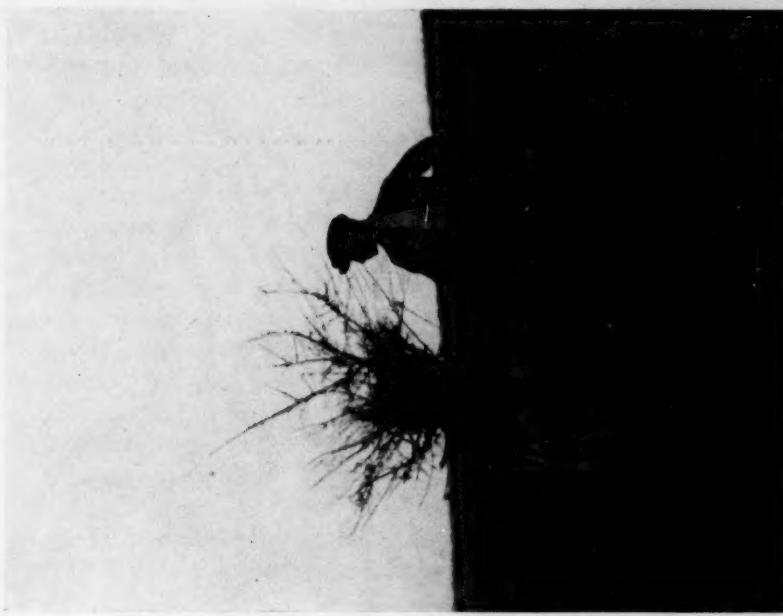
Swainson's Hawk is exclusively a summer resident, making its first appearance about the first week in April and leaving surprisingly early in the fall. The spring migration to the northward is very irregular, many continuing to pass through for a considerable period after the local birds have started nest building. They are especially fond of almost treeless regions and might well be called a "prairie" Hawk as they are perhaps most often seen coursing only a few feet above the ground in search of their prey, their long wings making them appear to be very much larger than they really are.

There are two distinct plumages, one practically uniform dark brown, the other a pale-bellied type that is subject to a very great variation in markings. These two phases are about equally com-



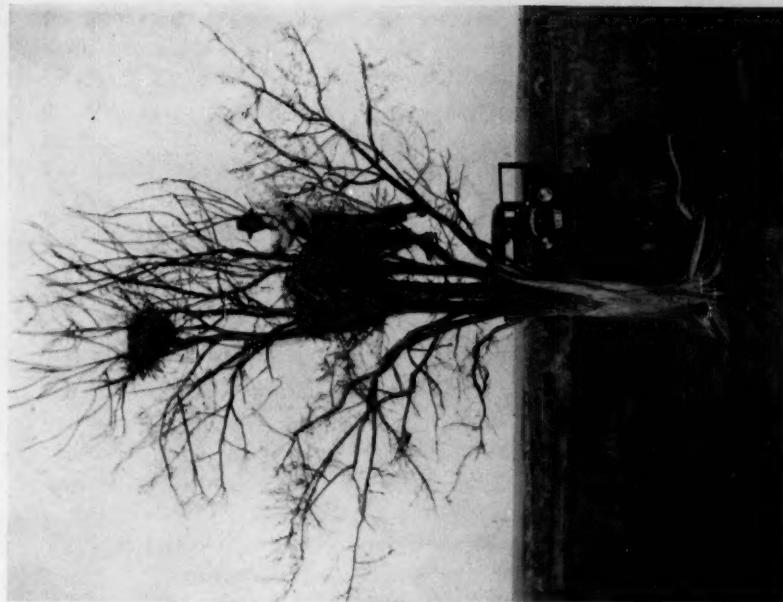


Two Views of a Conglomerate Nesting: Ferruginous Rough-leg Nest, with one of a Raven on top and a Swainson's Hawk above it, with a Magpie's Nest on the side.



NEST OF SWAINSON'S HAWK FOUR FEET FROM GROUND.

NESTS OF SWAINSON'S HAWK (ABOVE) AND FERRUGINOUS ROUGH-LEG (BELOW).





mon with us, in fact it is not at all unusual to find a nesting pair in which one parent is entirely dark, while the other is the light colored type. It may be of interest to say that in this state the dark phase of the Ferruginous Rough-leg and the Western Red-tail (*Buteo borealis calurus*) is exceedingly unusual, this being particularly true in the former.

Nest-building commences about the middle of April, and, unless the birds have been seriously disturbed, they prefer to repair a nest of the previous year, or years, to building a new one. In its construction the nest is the most carelessly built of any raptor that we have seen, often presenting such a ragged appearance that it would seem almost certain that it could not be occupied. This was especially true of a nest near Dayton, Columbia County, that was very kindly pointed out to us by Mr. Storrs H. Lyman, of Dayton, on June 9, 1933. It was placed sixty feet up in a yellow pine and is very much the highest nest that we have seen, while it was also a very old one and had been used by the birds for many years. Its appearance from the ground was so very dilapidated that we felt certain it could not be occupied, more especially because no end of pounding on the base of the tree could produce any signs of life from the nest. However, Mr. Lyman assured us that the birds were there and upon his climbing up a fine dark colored bird left the nest just before he reached it. In spite of the late date the nest contained two eggs in which incubation was only about half advanced. In with the eggs was a Blue Mountains ground squirrel (locally called "go-down") that was about half eaten and perfectly fresh, which we have prepared as evidence of the beneficial qualities of these Hawks. This nest was also unusual for this country as it was built of coarse sticks, the usual structure being of finer material. The nest, especially in the prairie districts, is composed of much finer material than is usual with the larger Hawks, the greater portion being often made up of the yellow stems of some kind of weed, although slender pieces of sage and grease-wood are often used. The lining is most often of fine shreds of bark and green leaves when in a locality where these are obtainable. The nest is also small for a *Buteo*, seldom being over eighteen inches in diameter by about a foot in depth when newly made. The distance that the nest is built from the ground depends almost

entirely upon the height of the tree selected, although we rarely find them over twenty-five feet up. The tree selected may be a living one, or one that has long been dead, either an evergreen or a deciduous tree being used impartially. The lowest nest that we ever saw contained two slightly incubated eggs and was built four feet above the ground in a dead locust tree, as may be seen in Plate XVI, fig. 1. In certain sections trees are so scarce that a most astonishing and almost unbelievable condition of affairs is found to exist. Several other species of birds use the same trees as *Buteo swainsoni* for their nesting sites, among them being the Ferruginous Rough-leg, the American Magpie (*Pica pica hudsonia*) and the American Raven (*Corvus corax sinuatus*). The ultimate result is that one tree may contain nests of all four species, although not at the same time excepting in the case of the Magpie and the Ferruginous Rough-leg. These two species frequently nest close together in the same tree and we have even found a nest of the Magpie built into the side of one of the Hawk, both nests containing full sets of eggs and all four birds in the tree when we approached. Perfect harmony always seems to exist. Plate XV, fig. 1, shows where all four species nested in the same Juniper tree which was only fourteen feet tall, the Ferruginous Rough-leg having built at least three nests in what may be termed the conglomerate structure seen on the left side of the tree. The lowest of these nests is one of the Ferruginous Rough-leg, directly on top of that is one of the Raven. At the top of the heap may plainly be seen the much smaller nest of a Swainson's Hawk, and joining the three nests together is one of the Magpie, which is directly on top of the Raven nest. In the top of the tree is a new nest of *regalis* that contained eggs at the time the picture was taken, while on the ground may be seen another nest of *regalis* that the birds had evidently tried to build on top of the heap, but which for some reason had not remained in place. At the lower right in the tree is still another nest of *regalis*, a very old one, which is barely a foot above the ground and shows perhaps better than anything else to what extremes these birds will go when pressed for a nesting site. Magpies have such a fascination for joining other large nests together that it is a practical certainty they will incorporate all the nests in the center of the tree by building one

in the now small open space, thus forming what may be termed an unbroken chimney of nests from the top of the tree to the bottom. Plate XV, fig. 2 shows a different view of this structure, a clearer idea of which can be gathered from the fact that the man is five feet, nine inches tall. In Plate XVI, fig. 2 may be seen another type of nesting site, which is a dead locust tree. The lower nest of the two is one of *regalis* and was built and used a year before the upper nest, which is one of *swainsoni*. Here again is an admirable opportunity for Magpies to incorporate the two nests, for the dimensions of their nest make little difference to these absurd birds if they can only find enough material for its construction. In concluding the discussion of nesting sites we have never found a nest of *swainsoni* built anywhere but in a tree.

The eggs are deposited at an unusually late date for such a large Hawk and it is hard to ascribe any definite reason for this unless it is determined by the availability of the right variety of food for the young. The average date for fresh, full sets is about May 15, with surprisingly little variation in a large number of nests. The usual number in a set is three, with two not uncommon and four decidedly rare. They are white in ground color, with a slight tinge of greenish, spotted and blotched very handsomely in some specimens with different shades of brown and gray. These must be considered exceptional, for many are almost unmarked, but the majority may be placed somewhere between these two extremes. In shape they vary from short ovate to oval, while the measurements of eggs in our collections vary from  $2.22 \times 1.67$  to  $2.33 \times 1.82$  inches.

A study of the food supply of Swainson's Hawk convinces us that this species is one hundred percent beneficial, which is frequently made doubly evident by the fact that small birds very frequently nest in the immediate vicinity and sometimes in the same tree. In the low bushes directly below the nest of this Hawk that we have described from Fayton, Washington, we found occupied nests of Wright's Flycatcher (*Empidonax wrighti*), Western Chipping Sparrow (*Spizella passerina arizonae*) and Lazuli Bunting (*Passerina amoena*), while it was perfectly evident that several other species had nests that we failed to locate. A very large percentage of their food consists of ground squirrels of different

kinds and many varieties of insects, while snakes are a favorite item of diet as in the case of the other Buteos. An especially interesting instance of snake eating was afforded us one spring in Benton County, Washington, when we found a medium sized bull snake which had partly accomplished the act of swallowing a young rabbit that looked to us very much too large for it. After watching the seemingly impossible feat being accomplished we continued on our way, but after going on for a few hundred yards we looked back and saw a Swainson's Hawk rising from the ground with what must almost certainly have been the same snake dangling from its claws. The student of wild life, in spite of all its beauty, is frequently forced to the realization that nature is all too frequently a continuous tragedy.

*Tacoma, Washington.*

THE FIRST RECORDED LISTS OF BIRDS IN THE  
UNITED STATES.

BY HAROLD C. BRYANT.

IN the January, 1933, number of 'The Auk' Dr. T. S. Palmer in reporting on the Fiftieth Meeting of the A. O. U. refers to a paper by Bayard A. Christy on Topsell's 'Fowles of Heauen,' a manuscript discovered in the Huntington Library at San Marino, California. This manuscript written about 1614, or just prior thereto, contains an early list, with descriptions, of Virginia birds (The Auk, 50, July 1933, pp. 275-283). Doctor Palmer stated that so far as is known this is the earliest list of American birds. Dr. J. J. Murray, President of the Ornithological Society of Virginia, writing Doctor Palmer about this statement reported that he thought there were earlier lists for the southeastern part of the United States and still earlier notes for other parts of the continent. This view he later supported in his 'A Brief History of Virginia Ornithology' (The Raven, March, 1933, vol. 4, pp. 2-11) for he states:

"Ornithological observations in Virginia date back to the earliest years of the seventeenth century. The earliest bird notes from the North American continent, according to a paper read at the last meeting of the A. O. U., come from Canada and are to be found in the writings of Jacques Cartier (1534), one of the early French explorers (The Auk, January 1933, p. 68). Strange to say the ornithological notes from the far southwestern State of New Mexico antedate all others in the United States by virtue of the observations made on Coronado's expedition in 1540-1549 (Birds of New Mexico by Mrs. F. M. Bailey, pp. 1-15). North Carolina comes first among the eastern states, notes of birds having been made on Roanoke Island in 1584 by Captain Barlowe and in 1586 by Thomas Hariot (Birds of North Carolina by Pearson and the Brimleys, p. 1). Virginis comes third among the states, mention of the Red-winged Blackbird occurring as early as 1606 in the papers of George Percy, and a fairly extensive list of birds being given in 1610-1612 by William Strachey, one of the Jamestown colonists, in his book 'The Historie of travale into Virginia Britannia,' which was printed many years later (1609) in London for the Hakluyt Society" (The Raven, March 1933, vol. 4, pp. 2-11).

Because of its connection with Jamestown and naturalist developments in the Colonial National Monument I became interested

in this list of Strachey's. Having procured the volume from the Library of Congress I was able to substantiate Doctor Murray's statement that earlier lists than that of Topsell are known. Since Topsell states that he is indebted to Doctor Bonham for some of his descriptions and to Mr. Richard Hakluyt for a picture of a Towhee, he may have obtained some of his material from colonist Strachey's writings.

William Strachey's paragraphs relating to birds (pp. 125-126) though quoted in Rives' 'A Catalogue of the Birds of the Virginias' (1890), are again quoted here. In addition to furnishing proof of an actual list, rather than mere notes about birds, as early as 1612, the abstract will be enjoyed for its mention of the Carolina Parquet and Pasasenger Pigeon, both now extinct, as well as for the subject matter, quaint spelling and odd method of presentation:

"Likewise, as they have fructs and beasts, so have they fowle, and that great store. Of birdes, the eagle is the greatest devourer, and many of them there: there be divers sortes of hawkes, sparhawkes, lanceretts, goshawkes, falcons, and ospreys; I brought home from thence this yeare myself, a falcon, and a tassell, the one sent by Sir Thomas Dale to his highnes the Prince, and the other was presented to the Earle of Salsburye, faire ones. What the prowf of them maie be, I have not learned, they prey most upon fish.

"Turkeys there be great store, wild in the woods, like pheasants in England, forty in a company, as big as our tame here, and yt is an excellent fowle, and so passing good meat, as I maye well saie, yt is the best of any kind of flesh which I have ever yet eaten there.

"Partridges there are little bigger than our quailles! I have knowne of our men to have killed them with their small shott, sometime from off a tree five or six at a shoot.

"Cranes, white and grey; herons, both grey and white; woosells, or black byrds, with redd sholders; thrushes, and divers sorts of small byrdes, some carnation, some blew, and some other straunge kyndes, to us unknowne by name.

"In winter there are great store of swannes, geese, brants, duck, wedgeon, dottrell, oxeyes, mallard, teale, sheldrakes, and divers diving fowles, and of all these sortes, that abundance, as I dare avowe yt, no country in the world may have more.

"Parakitoes I have seene manie in the winter, and knowne divers killed, yet be they a fowle most swift of wing, their wings and breasts are of a greenish culour, with forked tayles, their heades, some crymsen, some yellowe, some orange-tawny, very beautifull. Some of our colonie who have seene of the East Indian parratts, affirme how they are like to

that kynd, which hath given us somewhat the more hope of the nerenes of the South Sea, these parratts, by all probability, like enough to come from some of the countryes upon that sea.

"A kind of wood-pidgeon we see in the winter time, and of them such nombers, as I should drawe (from our homelings here, such who have seene, peradventure, scarce one more then in the markett) the creditt of my relation concerning all the other in question, yf I should expresse what extended flocks, and how manie thousands in one flock, I have seene in one daie, wondering (I must confesse) at their flight, when, like so many thickned clowdes, they (having fed to the norward in the dayetyme) retourne againe more sowardly towards night to their roust; but there be manie hundred witnesses, who maie convince this my report, yf herein yt testifieth an untruth."

*National Park Service,  
Washington, D. C.*

## THE RÔLE OF ANGER IN EVOLUTION WITH PARTICULAR REFERENCE TO THE COLORS AND SONGS OF BIRDS.

BY FRANCIS H. ALLEN.

THE problems connected with the origin and uses of the colors of animals and the songs of birds have been a fascinating and puzzling subject of research and speculation from the beginning of evolutionary science, and perhaps will remain unsolved to the end of zoölogical inquiry. There has been a marked tendency of late to set up theories opposed—at least on their faces—to the Darwinian theory of sexual selection. Some of these new theories postulate rivalry and even antagonism as the keynote to the evolution of bright color, display, and bird-song. One of these is set forth in an interesting and suggestive book by Major R. W. G. Hingston,<sup>1</sup> an Englishman who has had a considerable field experience in India and South America in the observation of mammals, birds, and insects and who has read rather widely, though apparently without giving much attention to recent American authors. Another is outlined in Dr. Arthur A. Allen's recent paper on 'Sex Rhythm in the Ruffed Grouse (*Bonasa umbellus* Linn.) and Other Birds.'<sup>2</sup> It seems worth while to examine both of these theories rather carefully, and though they are by no means identical, they have enough in common to warrant considering them in a single paper. I shall take up Major Hingston's book first because it was the first to appear, and I shall discuss some of the broader aspects of the general subject before taking up Dr. Allen's paper.

To give the substance of his book in very brief form, it may be said that Hingston attributes all conspicuous color and all conspicuous appendages, such as horns, crests, manes, and tufts of hair or feathers, to a need for their use in combat. He shows that animals in fighting erect their crests, elevate their tails, spread their manes, and otherwise make themselves as large and conspicuous as possible, and he argues, with some show of reason,

<sup>1</sup> *The Meaning of Animal Colour and Adornment* (London, 1933).

<sup>2</sup> *Auk*, vol. 51, pp. 180–199, April, 1934.

that their crests, manes, and large tails or tail-tufts have been evolved for that express purpose. He shows that in many cases color has emphasized these features. As he puts it (page 12), "Conspicuous colour intensifies emotional expression, and this I believe is its consistent use all through the animal kingdom." (Emotion to this author, I must add, means anger only, for he admits the existence of no other—except fear.)

The color of every animal, according to Major Hingston, is the resultant of a conflict between a factor making for concealing coloration and another making for that conspicuous coloration that would be of use to it in combat. The environment and the physical equipment and habits of the animal fix the point at which a compromise is reached. Thus an animal living in the open without convenient cover, without weapons of defense, and without extraordinary powers of locomotion would of necessity be concealingly colored, the "fear" coloration overcoming the natural tendency that Hingston finds everywhere prevalent to develop a strong "anger" coloration. Such is a brief statement of what the author calls his "principle of colour conflict."

Moreover he extends his theory of the universality of the combat motive to cover the relations between the sexes—and in this rather ingenious, but possibly far-fetched way: What in birds we have been accustomed to call courtship—display, antics, song—is all directed, not towards the female, but against a rival male, and even in the final act of mating, the emotion of the male is that of triumph over his rivals rather than that of any purely sexual satisfaction, while a similar triumphal anger against all other females animates the female in this final act. Anger, thus, and fear, according to Major Hingston, are the only emotions that the lower animals ever experience.

Our author adduces some evidence to show that combat among birds is largely or almost entirely psychological, and to his mind that accounts for the enormous development of color in the plumage of birds, where it takes the place of the actual weapons of warfare.

To sum up Major Hingston's conclusions, I can do no better than quote a few passages. "All growth and development, whether of the individual or of the species, is based upon one common principle, namely the urge inherent within life itself to express

that force which for want of a better term we must call its emotional content" (page 378). He thinks all differences between species—not color alone—are due to conflict. "I hold the cause of evolution to be the conflict that exists in the vital forces inherent in life itself" (page 395). "The generating force [in speciation] is the vital influence in the species itself, and the track is one or other of the various outlets through which that impulse finds expression" (page 398). Naturally, he rejects natural selection as anything more than "the favouring or unfavouring influence of the environment"—"a collaborating influence." As for sexual selection, the whole book is, of course, an argument against it, and frequently the reader encounters such bald statements as "This is quite inexplicable on sexual selection."

As I intimated at the beginning, this is an interesting and suggestive book. Perhaps one ought not to quarrel with Major Hingston for leaving us at the end with another mysterious "vital influence" to account for—or to accept without accounting for. Perhaps one ought only to be grateful to him for amassing so great an array of evidence on the methods and machinery of combat among animals. But one cannot help suspecting that here is another case of a theory stretched beyond the snapping point. Why will not theorists be content with lesser conquests and not try to use their theories to account for everything in nature, and then in the end present us with new problems, so that new theories must be evolved to account for the working of those just presented? Not that I deprecate the formulation of theories. Science would be dry and profitless without them. But why not try to apply the old and fairly workable theories before starting new ones that end nowhere in particular?

Among these old and fairly workable theories I place that of sexual selection. It may be admitted that there is less in the nature of *active* selection on the part of the female than Darwin supposed, but the theory does not demand that. All that is necessary to make it valid is to show that males better equipped in any way than their rivals—in weapons, courage, strength, attractiveness of coloration, or the power or beauty of their vocal utterances—get mates more readily and hence leave more offspring. I am not going to make any attempt to do this in the present paper. I

simply want to call attention to the fact that much that is said against the theory is really beside the mark, and I suspect that some of the critics—not the more serious ones, of course—may have been misled by the term “sexual selection” into thinking that deliberate selection of mates by the females was implied, whereas it is just as much nature that does the selecting by this process as in the case of what Darwin called natural selection as opposed to artificial selection.

As a matter of fact, in the case of the book now under review, many of the facts adduced by the author—perhaps most or even all of them—can be accounted for on the sexual-selection theory, in spite of Major Hingston's frequent statements to the contrary. Indeed, I had read a considerable distance into the book before I discovered that he supposed his combat principle to be contrary to that theory. What he shows in his first chapter as to the coloration of the lion—black or blackish on mane, ears, and tail-tuft, which are displayed in fighting—the strongest and most convincing part of his book, seems to be an excellent argument for sexual selection, since obviously the lion best equipped for terrorizing his rivals would most easily win mates. Natural selection, too, may have helped to perpetuate the terrorizing equipment of the lion and other mammals, since the individuals best equipped to frighten animals of other species that dispute their territory might enjoy longer lives and hence leave more descendants. Whether the terror coloration would help by intimidating prey, as Hingston believes, is, on the other hand, open to serious question.

To go at all minutely into Major Hingston's instances and arguments would take altogether too much time. I may mention a few of his points, however, and give what I conceive to be the answers. He believes that “animals have their upper surfaces darker than their under surfaces because it is the upper surface that is visible to the enemy while the under surface is hidden from view” (page 28). He makes no mention at all of Thayer's principle of counter-shading for concealment, which is, I believe, pretty generally accepted.

He makes a distinction between warning and threatening colors, denying the existence of the former. To him the skunk's white is for purposes of active threat rather than to warn its enemies away.

This looks a little like a distinction without a difference. White rump and tail patches are, he thinks, primarily for the purpose of startling carnivores, though he admits that warning the rest of the herd may have come to be the more important function.

The brilliant naked posteriors of certain monkeys also have a threatening function, and he likens the red to that of the flushing of the human face in anger. Just why nature should have chosen this particular part of the monkey for threatening purposes he does not make clear. One would think its exposure might put the animal at a disadvantage in an attack.

Man's hair, wherever placed, is for threat, not adornment, according to Hingston. As to the hair of the head, his entire argument concerns men's hair, and he overlooks the fact that women's hair has long been considered ornamental. The beard, similarly, has a threatening function, and one can understand on that theory why women are unprovided with beards, but when we come to consider axillary and pubic hair, we encounter again the difficulty that women as well as men are provided with those appendages. Major Hingston thinks that man's erect posture and his habit of raising his arms in fighting makes it appropriate, if not inevitable, that these particular regions develop these terrorizing tufts.

I wonder if this might not be a better guess as to the origin and purpose of these specialized developments of the hair: Axillary and pubic hair in primitive man gave notice that their possessors were ready for reproduction. The lack of a well-developed sense of smell in man made some visual notice necessary in order that men and women might not waste their time on immature members of the opposite sex. Beards, coming to full growth later than pubic and axillary hair, indicated virility and complete maturity. They were adapted to the patriarchal system. The head of the family would have the largest beard. Not so long ago many doctors cultivated beards as a mark of maturity, and *not*, I think, for the purpose of terrifying their patients—or even rival practitioners.

Coming to the birds, our author avers that feathers are primarily for purposes of threat. He sees no value in them as preservers of the body-temperature. Similarly their colors, when not concealing, are for combat. The colors are brighter and more varied than

mammalian colors because their battles are chiefly psychological and the colors have become weapons of themselves. He calls attention to the fact that crests, plumes, combs, and other such ornaments tend to assume conspicuous colors which call attention to them.

All is grist that comes to Hingston's mill. Thus the wide opening of the mouth by nestlings has a secondary use in frightening away small enemies. As to white in a bird's tail, "The exposure is a gesture of avian defiance, and secondarily a signal to mate or young or other members of the flock" (page 146).

On page 153 he makes the rather astonishing statement: "If bright colour is an ornament, and the females choose the most ornamented males, then the offspring ought to be intermediate in ornament between that of the male and female parent . . . But it is not so." It is difficult to follow this argument.

He considers spots and stripes on young birds concealing, but bars on the wings and tails of hawks and owls threatening, but does not explain why the latter should be any more threatening than the former.

On page 226 we read: "If these bright colours were intended for beauty, then beauty would be the test of mating and the necessity for pugnacity would not arise. The more beautiful the animal was, the less it would need to fight with rivals." To this we might reply, "No! the more it would invite attack from the less beautiful, and the more it would need to fight to defend itself."

Speaking of domestic animals, he says: "The theory of colour-conflict is likely to serve as a useful instrument for explaining the colour-patterns of domesticated animals. While on the view that colour is an adornment, no light whatever can be thrown on this interesting and complicated subject" (page 243). I should suppose that no other agency than artificial selection was necessary to account for these colour-patterns—working, of course, in conjunction with purely physiological laws.

Here is a rather characteristic *non sequitur* in argument: Speaking of the use by man of imitations of the tusks of animals, he says: "Man does this solely for psychological reasons. Hence there can be little doubt that the phenomenon he has copied possesses an identical function." That is, the fact that a savage wears a mask

with prominent tusks to scare his enemies is *prima facie* evidence that the wild boar's tusks are chiefly for intimidation instead of for actual combat.

And now we come to bird-song. Hingston thinks song cannot be for the purpose of charming the female because the male sings from a high perch instead of seeking her out to pour it into her ear. The obvious answer is, of course, that the male has to advertise himself in order to attract the female. He adduces the loudness of song as indicating its combative character, but birds do not always sing loud. I quote again: "The more terrific it can make the utterance, the more clearly it will demonstrate to possible rivals the aggressive force that it can bring against them" (page 274). Is it possible that what we commonly call bird-song can be terrific to any creature? It may dishearten rivals, but actually terrifying them is another matter. We shall come back to this subject later.

The gesticulations of the male, he thinks, cannot be made for the benefit of the female because she is where she cannot see them. This seems a curious notion. On page 276 he says: "It might be said that the males were competing with each other in order that the female might choose the most melodious. But that is impossible, for they are almost always far apart." (Note the "impossible" here, a favorite word with Major Hingston.) On the other side, supporters of the sexual-selection theory have repeatedly pointed out that a deliberate choice between males seen or heard at the same time was not at all necessary to the theory.

Discussing mimicry among birds, our author considers that imitations are challenges to the birds imitated. But that does not account for the restriction of the habit to a comparatively few species.

On pages 288, 289, we read: "No bird of the ocean has a good song. Singing is decidedly a land accomplishment. Why is this? No explanation is possible on sexual selection." The answer, of course, is that they are unprovided with the proper vocal organs and that, like many families of land-birds, they have developed other ways of making themselves attractive to the opposite sex.

In treating of mating flights and dances he says they are explicable only on his theory and cannot be explained on sexual selection (292-97). Of course, he fails to prove his point. In fact,

he offers no evidence whatever against the sexual-selection explanation; he simply makes the bald statement.

Perhaps I have said enough to indicate the nature of Major Hingston's evidence and arguments in favor of his theory of the rôle of anger in the development of color, display, and song in birds.<sup>1</sup> Let us now consider the subject more generally. And let me begin by admitting that in certain cases, especially in certain mammals, as in the lion, color may have great threatening value, particularly in conjunction with such appendages as manes and ear and tail tufts. It seems very probable that these colors and these appendages may actually have been developed through their usefulness in combat by supplying a psychological reinforcement to the physical powers of their possessor. For the machinery by which the development is brought about, I think we may still look to sexual selection, aided by natural selection as at least a part of the motive power. To attribute it all to some mysterious newly conceived force in nature seems to me to get us nowhere in particular. But the color that seems most threatening in mammals is black, and human psychology will readily admit the possibility that black in general may operate effectively in combat. Similarly red, the color of blood, may be admitted to have terrifying possibilities. Among birds, however, we find a great variety of bright and, to us, pleasing colors and color-patterns, many of which it is difficult for human beings to conceive of as in themselves suggesting anger or intimidation. Such are the blue of the Bluebird, the crimson of the Purple Finch, the rich attire of the Wood Duck. Of course, Abbott Thayer has shown the possibility that many of these bright colors may be actually concealing under certain circumstances in the bird's natural haunts, but for the moment we may ignore that possibility and consider them simply as bright and pleasing colors. And it is difficult to escape the conviction that they have some purpose to fulfill and are not purely fortuitous. Some have thought that they were simply expressions of their wearers' vigor, but it is hard to see how a green pigment that gives

<sup>1</sup> I have omitted mention of Hingston's evidence drawn from reptiles, amphibians, insects, etc., because a consideration of this would widen too much the scope of this paper. I have also refrained from calling attention to a number of errors of fact concerning American species. The detection of such errors does not increase the reader's confidence, but neither does it of itself invalidate the author's generalizations.

a blue color by means of refraction or reflection or both can indicate greater vigor than a brown or black pigment. At any rate, mere vigor can hardly account for the great variety in color and pattern to be seen in birds. It seems much more reasonable to assume that such colors and patterns have been produced and developed by some definite evolutionary process to serve some end that is useful to the bird.

Now, Howard and others have shown that many species of birds do actually use, in fighting, display very similar to, or even identical with, that used in courtship. I do not think, however, that we are warranted in assuming, as Hingston does, that the emotion that animates the birds in both cases is the same. Birds are limited in their means of showing emotion, and it does not seem at all strange that a male bird should "show off" before a prospective mate in much the same way he would before a rival. We can readily admit, too, that a feeling of rivalry may prompt a bird to show another male all his magnificence of coloration and his proficiency as a songster. It is not the *use* of color and song for the purpose of discouraging rivals that I am disputing; it is that they could have originated in that way and for that purpose.

It should also be noted that there are many courtship actions between birds that are not used in combat and that could not conceivably have arisen as forms of offensive or defensive behavior. Such are the feeding and nest-building actions that some birds use in courtship.

It seems to me that Major Hingston and others who emphasize the rôle of anger in evolution have failed to go back to first principles and have allowed themselves to become sidetracked. Now, the one great aim of all life is self-perpetuation. For unisexual animals this aim is served by two fundamental instincts—that of self-preservation and that of reproduction. The first of these fundamental instincts is served by the appetites hunger and thirst and the reactions that accompany the emotion of fear. The reproductive instinct is served by the sex-urge. The reactions that accompany the emotion of anger can in turn serve any one of the three appetites—hunger, thirst, and sex—or the fear reactions. That is, an animal can make an effective use of anger against another that is threatening its food-supply or that monopolizes its

drinking-pool or that comes between it and a desired mate or that threatens it with bodily injury. But in all such cases anger is only a tool in the service of more fundamental appetites and emotions.

To ascribe to anger—and this includes pugnacity and the desire for dominance—to ascribe to anger the leading rôle in the life of the individual or the race seems to imply the ignoring of two much more important factors. It is certainly more reasonable to look for an explanation of the evolution of any unisexual animal in the fundamental instincts that provide for the preservation of the individual and of the race than in any such subsidiary emotion as anger.

If we admit this, we must, of course, fall back upon the sexual urge to account for any revealing coloration we find among birds. We may admit that anger and pugnacity may play their part in connection with the sexual urge, but we can hardly grant it a leading part, and that because the one important thing is to bring the sexes together, not to keep individual males apart. The chief importance of territory to a male bird is that its possession enables him to provide for the next generation. That is his purpose—unrecognized by him, of course—in defending it against his rivals. In other words, the instinct to acquire and defend a particular territory has arisen because it is of use to the species. It must not be forgotten that this territorial instinct derives its importance solely from the end it serves—that of perpetuating the species.

Now, of course, there are two ways in which Darwin's sexual selection is supposed to work. One is through the preferences of the female. The other is through the superiority of the male in combat with rivals. Exponents of the anger theory might contend that the latter method was the only important one in all animals. We may admit that it is the more important way in many animals—perhaps in most mammals—those that depend upon strength and fighting-equipment to overpower their rivals. When we come to birds, however, we find quite a different state of things. We find beauty<sup>1</sup> of color, color-pattern, form, and vocal utterance developed to an extraordinary degree. It is hard to believe that this beauty can have been developed purely for combat purposes. If produced by selection at all, how could the rose of the Grosbeak's

<sup>1</sup>The word "beauty" is here used as equivalent to pleasingness.

breast, the ocelli of the Peacock's tail-coverts, the tones of the Hermit Thrush's song be the products of an ascending series of angry conflicts? If psychological combat had operated on the Thrush's voice—to take but one of these examples—why did it not grow harsher and harsher, more and more truly terrifying?

The obvious reply of Hingston's supporters will be that for all we know the Hermit Thrush's song, though pleasing to our ears, is actually disagreeable to birds. It may be difficult to prove that this is not the case. On the other hand, I suspect it would be still more difficult to prove that these melodious sounds, pleasing to us because of their mathematical regularity, are not for the same reason pleasing to the birds belonging to that suborder the Passeres which has developed the voice to an extent exceeded only, if at all, by man. It is surely not unreasonable to assume that birds experience sensations of pleasure upon hearing bird-songs. These pleasurable sensations might be neutralized and yield to other emotions if the song came from a recognized rival, but a female bird could hardly fail to be pleased by a good song of the type to which her nature compelled her to react, and pleased in proportion to its quality. And all I have said of song is equally applicable to the evolution of pleasing colors and color-patterns.

Much of the foregoing is equally applicable in a discussion of Dr. Arthur A. Allen's views as set forth in his paper "Sex Rhythm in the Ruffed Grouse and Other Birds." This important paper is based on a long series of careful experiments and observations on Grouse and birds of other species and reaches some very interesting conclusions. With some of these conclusions probably few if any ornithologists are in a position to disagree. The theories have been very carefully worked out and do not lay themselves open to attack all along the line, as does Major Hingston's thesis. But, though some of the conclusions are, perhaps, unassailable, others do not appear to be entirely convincing.

The evidence may be adequate to support four of the eight conclusions enumerated at the end of Dr. Allen's paper: that (4) "female birds have a short oestrus period during which fertilization must take place"; (5) "male birds have a similar short mating period during which they are able to fertilize eggs"; (7) "in order

to insure the propagation of the strongest birds, the virile male must keep all the other males out of his territory and must drive out all females that are not in the same reproductive cycle [= stage] as himself lest another male mate with his female, or lest he waste his energy on a female that does not synchronize with him"; and (8) "the stage of the reproductive cycle each spring is determined primarily by the vigor of the bird . . . and secondly by the *mental state* of the individual, and this is determined largely by the results of his conflicts with others of his kind."

The other four conclusions we may consider one by one.

"1. Birds are not sex conscious, that is, they do not discriminate between the sexes as such." In one sense few would dispute this. Probably no serious student believes that birds can be sex-conscious in the sense in which man is sex-conscious. We cannot believe that birds have any conception of maleness or femaleness in the abstract, or that any bird *thinks* of such a thing as sex-difference or even recognizes another bird of its species as likely to become at some future time a mate or a rival or to have been such in the past. It is doubtless all a matter of reaction to stimuli. Doubtless mates get accustomed to each other *as individuals*, and their companionship may last long beyond the breeding season, as it appears to do in the case of the White-breasted Nuthatch, for instance. This does not mean, however, that they have any sense of being mated one to the other. In this sense birds are not sex-conscious, and no new experiments were needed to prove it. But in spite of the individual instances to the contrary that Dr. Allen cites, we must believe that *in the long run* males react as males and females react as females—that males react in the male manner to feminine behavior in the females and females react femininely to masculine behavior in the males. That, I take it, is *all* there is to 'cognizance of sex' in birds, but that would seem to be enough.

Dr. Allen has seen one of his captive female Ruffed Grouse go through actions of coition with "a small *male* that had been completely subjugated by a larger companion and lay flat in a corner of the pen." In this case, though the female played the male's part so far as she was able, it is clear that the subjugated male was entirely passive and did not *play* the part of the female. It seems also extremely unlikely that such an incident could have happened

in a state of nature. We must not lose sight of the fact that the Grouse under observation were confined in pens where it was impossible for the subjugated birds to save their self-respect by escaping into a different territory.

It seems probable, too, that the Ruffed Grouse has a peculiar psychology of its own that lends itself to abnormal behavior in unusual situations. There are many cases on record, for instance, of wild Ruffed Grouse becoming friendly and familiar with men, women, and children out of doors. An instance came under my own observation in February, 1924. I heard of a Grouse that had approached neighbors of mine who lived near the woods and had been fed by them. One morning I carried some scratch feed to the road leading into the woods. The bird, a female, approached me and, walking up within a yard of my feet, began feeding on the scratch feed I had scattered. She fed for some time, but when I started off to catch my morning train, she left the food and followed me, crossing in front of me only a yard away and walking round me till the approach of another person sent her walking off. It seemed clear that, as in other such cases, it was human companionship the bird wanted more than the food. I have supposed that this sort of behavior was due to an abnormal development of the herd instinct, the bird transferring to man the allegiance normally due to the flock just as dogs have done from time immemorial. But I know of no other species of bird with a similar kink in its mental make-up, and it may be of some significance in connection with Dr. Allen's observations.

At all events, one can hardly escape the conviction that the male Grouse that displayed before women and children but not before men must have been an abnormal bird.

"2. Courtship displays, including song, are one form of intimidation and the stronger bird, irrespective of sex, is the more active performer." Here I suppose it is through inadvertence that Dr. Allen states that *in song* the stronger bird, irrespective of sex, is the more active performer. Probably his "including song" was intended to apply only to the first part of the sentence. Even with this emendation this conclusion needs further qualification, I think, before it can be universally accepted. It leads, however, to the next conclusion:

"3. Domination and fear are the important principles in the development of secondary sexual characters . . ." For the reasons given in the discussion of Hingston's book it would seem that this conclusion is open to grave question.

Dr. Allen says of the male Grouse that "if he is able to prove his superiority—and a female is strong enough to resist or elude his attacks until they are both in the same mating cycle—fertilization takes place and the world is assured of the reproduction of the strongest individuals. The Survival of the Fittest still seems to be the strongest law of Nature." But, is not this a case of the *mating* of the fittest, and is it not sexual selection, pure and simple?

Dr. Allen tells of capturing a male Song Sparrow and confining it in a cage 4 × 4 × 12 inches and exposing it to a rival, which tried to attack it through the wires of the cage. The captive bird, though apparently not alarmed at finding itself in captivity, did display extreme fear of the attacking Sparrow, and when the latter got hold of one of its primaries, quivered and died from the shock. He regards this as evidence that the fear of rivals on the part of weaker birds may be the activating principle "in developing the ornamental or conspicuous plumes, or bright colors or loud songs of male birds" through natural selection. It seems probable, however, that it was not simply the fear of its rival that killed the Song Sparrow but, in addition, its sense of its own helplessness in so small a cage. Doubtless if the affair had taken place in the open, the weaker bird would have flown away and 'lived to fight another day'; so that here again *natural* selection, or the *survival* of the fittest, would not be brought into play.

Dr. Allen admits that "it is difficult sometimes to understand how little differences in color or song can have much survival value," but he considers that "*if their presence indicates greater strength to rival males* and therefore helps to produce fear or inferiorism, then their value cannot be measured by their slightness. They have real value in the eyes or ears of rival males and therefore real significance in the action of natural selection." I must still insist that the case for *sexual* selection, even through the "eyes and ears of rival males," is much stronger than that for natural selection. But for reasons adduced in an earlier part of this paper the case for sexual selection operating through the preferences of the female seems to me stronger still.

"6. Bird behavior, including the earlier arrival of males than of females on the nesting ground, and of adults than first year birds; selection of territory, song, fighting, and display of plumage are explainable on the basis of the necessity for synchronizing the mating cycles of male and female."

But would it not have been a more direct method of synchronizing the mating cycles to lengthen the periods of potency in both male and female through other and more economical processes of natural selection? Why should we assume that the sex rhythm is immutable and that all else must conform to that? As it is, in the light of Dr. Allen's discoveries we may agree that nature used an agency she had at hand to bring about this synchronism—the combativeness of males not yet ready for mating—but to go farther and say that the combativeness arose from the necessity for its use in that particular connection, and that all ornament and song were caused by the need for the use of combativeness in mating, would seem to be something like employing a high-power tractor to drag a baby-carriage.

Here we have two supremely important phases of the evolution of bird life—the development of that vast range of varied and beautiful colors and color-patterns and ornamental plumes on the one hand, and, on the other, the development of all that infinite variety of rhythm and tone and melody that we know in bird-song. Can we believe that all this hinges on so comparatively trivial a thing as a few days of advancement or delay in the development of the gonads? Is it not more reasonable to attribute ornament and song to something deep-seated in the psychology of the birds—a peculiar sensitiveness to bright colors and melodious sounds—a psychological concomitant of that sexual urge which is absolutely necessary to the continuation of bird-life on the globe? And especially when we consider that it is *pleasing* colors and sounds that we have to account for, not such as we should expect to be evolved by processes that aim at producing more and more terrifying effects.

For without denying the importance of intimidation in keeping away weaker rivals and in discouraging all but the strong females, we may point out that the males that are most attractive, in color or in song, will naturally attract the largest number of females,

and so have an advantage over their rivals and leave more progeny.

Our examination of these two studies thus brings us back to Darwin's theory of sexual selection substantially as he left it, though with some interesting corollaries supplied by recent investigators. It seems to show that anger has had a rôle in evolution, especially in that of the carnivorous mammals, acting through both natural selection and sexual selection; but that sexual selection by means of the conscious or unconscious preferences of the female has played a much more important part in the evolution of color, song, and display.

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THE FOOD OF THE AMERICAN CROW IN CENTRAL  
NEW YORK STATE.<sup>1</sup>

BY PAUL E. HERING.

IN many of the food studies of our American birds, the analyses have been based upon specimens collected at irregular intervals of the year, and without taking into account the type of country where they were obtained. In the following analysis of the food of the Crow (*Corvus brachyrhynchos brachyrhynchos*) an attempt was made to study the food habits of the bird from specimens which were collected in a restricted territory. As the Crow is omnivorous, its food will vary according to the locality, as well as to the abundance of available food present. Four hundred and sixty-five specimens were collected from five counties covering approximately a radius of fifty miles from Ithaca, New York. An effort was made to obtain data on the type of vegetation, or crops, at or near the locality where the birds were collected. An attempt was also made to collect, as far as possible, a representative number of birds for each month of the year, so as to get a typical picture of the monthly diet.

In each case, the analysis was based upon the percentage by bulk method as used by the Biological Survey (McAtee 1912<sup>2</sup>).

## PLANT FOOD.

Vegetable material found in the stomachs formed the greatest bulk of the material, being represented as 61.53 per cent of the total. It was consumed by the Crow during every month of the year, but the greatest portion was taken during the winter months.

*Buckwheat.* By far, the largest proportion of plant food consisted of buckwheat. This does not figure prominently in previous studies, but in central New York it is widely cultivated and the birds always have a ready supply. It was found as 18.71 per cent

<sup>1</sup> A summary of a minor thesis submitted to the Faculty of the Graduate School of Cornell University. The writer is indebted to Dr. A. A. Allen under whom this study was undertaken; to Mr. W. E. Bostwick and Dr. W. J. Hamilton Jr. for the collection of the specimens and to Dr. W. C. Muenscher for the identification of the seeds.

<sup>2</sup> McAtee, W. L. 1912. Methods of Estimating the Contents of Bird Stomachs. *The Auk*, 29: 449-464.

of the yearly average and represented the largest percentage of vegetable material taken. Most of it was taken during the winter months, especially during February, March and April.

*Corn*, although claimed to be the favorite food of the Crow, was found as only 13.67 per cent of the yearly food, a quantity less than that of buckwheat. As with the latter, most of it was taken during the winter months. No corn was found, however, during August, but at the time when the "roasting-ear" stage becomes available an increase in its presence was noted. It is worthy of notice that during May, when the corn is sown in central New York, the amount present was only 1.10 per cent in thirty specimens collected during that month. The fact that so small a quantity was taken seems to show that the Crows in this area had not the proclivity for digging up the seeds of which it is so commonly accused.

Grains, other than buckwheat and corn, such as oats, wheat and barley were taken throughout the year. Oats were found largely present during the winter months, but April showed the largest amount, while during the warmer parts of the year the quantity was very small. At harvest time no increase was noted. It seems probable that this grain does not form a particularly favorite food of the Crow and is taken only when the choice of more desirable food is lacking, as in winter. Wheat was found only in isolated cases and represented but 4.25 per cent of the yearly food. Its presence was noted in nine months of the year, the winter months not being represented. It is believed that this grain does not form an important item of the bird's food and that it was picked up largely as waste grain. Barley was found only in one stomach, collected during February, forming 10 per cent of the stomach contents.

*Cultivated Fruit.* Cultivated cherries were found present in stomachs of birds collected during June, July and August, July being the month of greatest consumption, represented by 5.02 per cent. It was impossible to determine whether these cherries were taken from private orchards or whether they came from deserted ones, as deserted farm-lands are common in certain parts of the range studied. Seeds of raspberries were found in two stomachs collected during July, the maximum being 20 per cent for one

stomach. In this case, as well, it could not be determined whether these berries came from cultivated or wild plants. Grape seeds were also found during the winter months, but in this case they were probably taken along with other refuse, as they were always associated with garbage.

*Wild fruit* was present in nearly every month of the year. This item constituted 10.12 per cent of the yearly food. The maximum consumption took place during July and August where it was represented as 33.09 and 30.50 per cent respectively. The least amount taken occurred during January and May. Wild cherries (*Prunus serotina*) formed the greatest bulk of wild fruit. Other fruits were *Prunus virginianus*, *Vitis*, *Rhus typhina*, *R. toxicodendron*, *Cornus stolonifera* and *Solanum dulcamara*.

*Wild seeds* were less common and it is believed that Crows picked these up accidentally with items which were more preferred. The seeds found were those of *Polygonum*, *Rumex*, and *Lepidium*.

#### ANIMAL FOOD.

The animal food consisted of about one-fifth of the total food, or 19.35 per cent. Although less than the vegetable food, it exceeded the latter in its economic importance. While the largest amount of plant material was consumed during the winter months the animal food reached its highest proportions during May when it amounted to 77.44 per cent.

Insects formed the greatest bulk of this type and were consumed in nearly every month of the year. Most of this food was taken from May to October.

*Coleoptera* were found in the stomachs in almost every month. *Carabidae* were commonly taken and amounted to a yearly consumption of 2.22 per cent, with a maximum of 3.71 per cent during June. These beetles were represented by *Calosoma*, *Harpalus*, *Lebia grandis* and *Cicindela*. *Elateridae* and their larvae, the latter living wholly in the soil, were not as plentiful as expected. *Hemicrepidius* was found in but one stomach. The *Scarabidae* formed by far the largest amount of *Coleoptera* consumed, consisting of 6.37 per cent of the yearly average. The most important representatives of this family were specimens of *Phyllophaga* or May-beetles. Reference to the chart will show that the greatest

consumption of these beetles took place during May and that it coincided with the period of greatest abundance of adult beetles. Out of 30 birds collected during May, 27 stomachs contained adult beetles and 7 of these contained 100 per cent. Other Coleoptera were eaten but did not figure as prominently as the above families. The Crow seems to confine its attention mainly to the Scarabeidae.

Probably next in importance to the consumption of May-beetles is the destruction of grasshoppers. These insects formed the most prominent animal food during the fall. The form most commonly taken was *Melanoplus femur-rubrum*, a very common species in central New York, which may become injurious when too abundant. This grasshopper was present in stomachs of birds collected from July to October and the amount represented 11 per cent of the yearly insect diet. Reference to the chart will show that the greatest consumption coincides with the greatest abundance of mature individuals.

Of the remaining insect orders, Lepidoptera, Hemiptera, Diptera, and Hymenoptera were present, but of the latter three only traces. The Lepidoptera amounted to 4.99 per cent of the yearly food comprising mainly caterpillars and pupae. The greatest consumption of caterpillars was 3.81 per cent during July. Only one specimen of a bug was found belonging to the Pentatomidae. Of the Diptera, two maggots were taken during November, and a larva of *Eristalus* was also taken during the same month. Ants were found in a few instances. It is believed that the Crow picks these insects up accidentally since they are present in such isolated cases.

Other invertebrates were not found in any great quantities. Spiders were taken only rarely, being found in one stomach. Of the Myriopods, both Chilopoda and Diplopoda were present. The latter formed only 0.24 per cent of the yearly consumption while the greatest quantity was consumed during June (2.90 per cent). The Chilopoda formed 0.55 per cent and were present during May, July, November and December. Since these animals are always found either at the surface of the soil or directly beneath, it is believed that the Crows picked them up along with other miscellaneous items.

As the Crows examined in this study were collected on farm lands very little aquatic material was found. Snails were present in a few cases. Crayfish, however, were found during June and July.

Of the amphibia taken, frogs were found in but one stomach collected in June and comprised but 1.02 per cent. Since frogs are occasionally trodden upon, or injured, the Crow has no trouble in picking them up.

No direct evidence could be found in the stomach analysis that the Crows had taken any native birds, either the eggs or nestlings. In the determination of this material, it is not always possible to rely upon stomach analysis alone, as the tender flesh of the nestlings is very quickly digested, little of the egg-shell is eaten, and the yolk often becomes unidentifiable as such. Eggs themselves do not tell the whole story, as Crows will pick up, along with other food, eggs of poultry throughout the year. In one instance, a foot of a Pigeon was found, but it was not possible to say whether the Crow had killed the bird or had picked it up as carrion. In a stomach of a nestling, about two weeks old, feathers were found which comprised about one-third of the total contents.

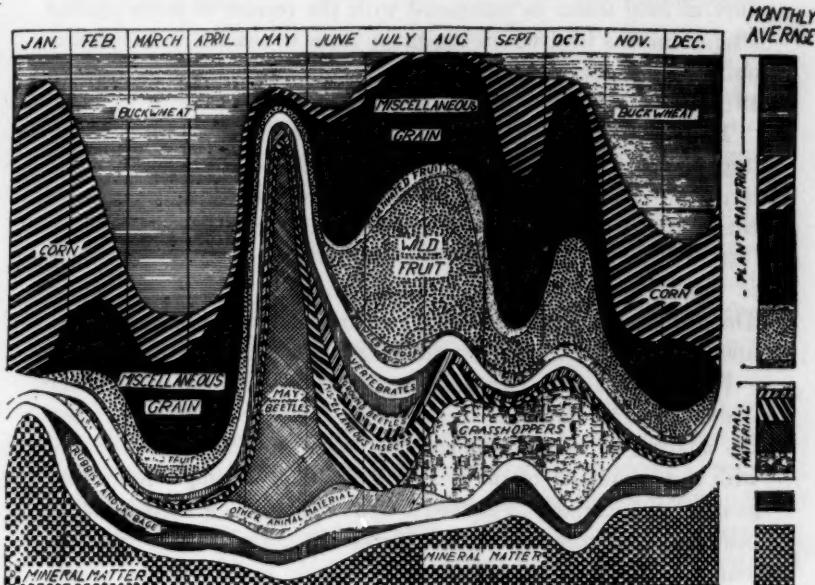
In the consumption of injurious mammals, the Crow can be considered beneficial. Remains of mammals comprised 1.34 per cent of the yearly food, and were present during nine months, the greatest amount taken in June and July. Most of the remains of mammals consisted of the bones of small rodents belonging to the genus *Microtus*. In one stomach collected during April there were four lower jaws of *Microtus*, together with a small number of other bones. One stomach collected in July contained 40 per cent of this food. Another stomach contained three lower jaws of the short-tailed shrew (*Blarina brevicauda*).

That the Crow is a scavenger is a well-known fact, yet it is often difficult to detect the fact from the analyses of stomachs.

Carrion may frequently be detected by the presence of other items in the stomach, such as carrion insects (*Silphidae*, *Staphylinidae*, *Calliphoridae* and *Scarphagidae*) which breed in decaying animal material. This index fails, however, during the winter months, when the Crow is most likely to eat carrion as these insects are hibernating at this time. Material found in this study which might be classed as carrion amounted to 1.08 per cent of the yearly

total average and was found most prevalent during the winter and spring months.

Much garbage is taken by the Crow, especially during those months when its more favored food is lacking. Under these circumstances the bird collects a variety of items. Seeds were partly classed under this category as they were found in stomachs of Crows collected during a time when these seeds were probably wastes from the dinner table. Thus seeds of pumpkins, apple,



orange, and grape were found from November to February. Together with garbage, but particularly during February, the shells of birds eggs were found which, in some cases, formed a considerable portion of the food. The yearly average for garbage consisted of 2.65 per cent and it was present in every month of the year. February showed the greatest amount taken, being represented by 11.23 per cent.

Mineral matter, which, of course, is not food, is added here because its elimination would change the proportion of the food taken. This item was taken so freely that the stomachs without

mineral matter were isolated cases. A certain amount of sand and gravel is essential in grinding up the various items of food taken, and quantities of pebbles and sand were consumed. The largest pebble taken was a little less than one-half inch in length.

#### CONCLUSIONS.

The fact that the Crows were taken from a restricted locality shows a great deal of variation with respect to the type and abundance of food taken as compared with the results of other similar studies on this bird where the range from which the material was obtained was much wider (Barrows and Schwarz 1895,<sup>1</sup> Kalmbach 1918<sup>2</sup>).

The most conspicuous point that arises in this study is the large amount of buckwheat present in the stomachs. Buckwheat is a crop much cultivated in this region, so that, when it is common, the Crow apparently prefers it to corn.

A final point is that the Crow will usually partake very freely of those items which are very abundant at a particular time. Thus, when May-beetles are very common, it will feed extensively upon them, and the same is true of grasshoppers and wild fruit.

With respect to a judgment as to the harmful qualities of the Crow, it can be said that there was no direct evidence based upon the analysis of these stomachs that the Crow had been harmful with respect to any of the items listed which are important as far as man is concerned. The bird is beneficial in the control of May-beetles, grasshoppers, and rodents, and neutral with respect to many insects and plants which were largely taken either as waste or which are of no particular economic interest to man.

*Ithaca, N. Y.*

<sup>1</sup> Barrows, W. B., and Schwarz, E. A. 1895. The Common Crow of the United States. U. S. Dept. Agric., Div. Orn. and Mam. Bull. No. 6.

<sup>2</sup> Kalmbach, E. R. 1918. The Crow and its Relation to Man. U. S. Dept. Agric. Bull. No. 621.

## THE CHRONICLE OF A FLICKER'S COURTSHIP.

BY CHARLES E. JOHNSON.

ON the morning of April 7, 1923, at Lawrence, Kansas, a male Flicker (*Colaptes auritus luteus*) suddenly began calling from an old elm about fifty feet from my house. I had not seen or heard the bird previously, in or about this tree nor in the general vicinity. There was a nest hole in the tree, and when the Flicker thus abruptly announced his presence he was clinging to the trunk at the lower edge of this hole. The tree was conveniently situated for observation from my window, and since it was evident that the Flicker had just discovered a suitable nesting place and was now loudly proclaiming the gladsome news to any listening lady Flicker within hearing distance, it occurred to me to try to follow his fortunes in his quest for a mate, whatever they might be. With the help of my wife, who kept up the notes for much of the time when I was absent, I was able to secure a much better daily record than would otherwise have been possible. As events proved, the task to which the Flicker had set himself required a much longer time than I had anticipated.

On this first day the Flicker kept repeating his ringing calls at short intervals until 4:40 p. m., when he flew away. On two or three occasions after a period of calling he would suddenly appear to become deeply dejected, when he would cling to the tree trunk in a sort of stupor, hunched up, his head hanging low. At the end of such a spell he would perk up, lift his head and start calling again at full throat. As will appear, these periods of depression, exhaustion or whatever it might be termed, also came upon him later. The chronicle from this day on follows.

*April 8.*—The Flicker began calling from his tree at 6 a. m. He remained about the tree, sometimes in it, sometimes on the ground near by (a vacant lot from which the grass had been burned), until 8:45 a. m., when he flew away. He returned at 9:30 and called from a limb near the hole, for about fifteen minutes, then left, but returned again at 10:40; flew away at 11:30, returned at 1:30 p. m., remained for but a short time and was seen no more that day.

*April 9.*—The Flicker began calling from his tree at 6:10 a. m.

Called repeatedly for a period of 15 minutes, then flew to a tree half a block distant and called from there a few times. His call series were spaced from five to fifteen seconds apart, with twenty-five to thirty-two "kucks" in each series. Called from his tree at intervals during the forenoon and in the early part of the afternoon, beyond which I made no further observations on this date.

*April 10.*—At 6 a. m., *three* female Flickers were at the nesting hole. One after another these females looked into the hole, climbed around the trunk of the tree as if to make sure that no other possibilities existed, and in general made what had all the appearance of a careful appraisal of the entire situation. The attitude of these females when at times they got too near to one another was ludicrous. Each would spread her tail, bow low and with the utmost dignity, and utter an icy "weechu-weechu," as if to say, "Your pardon, madam, I did not mean to intrude; I really have only a very slight interest in this entire matter." At times one of them would fly away to some other tree, and forthwith the other two would follow, whereupon all three, in the harmony of a common purpose, would proceed to circle the trunk as if to satisfy themselves that no more desirable nesting hole had been overlooked by the anxious swain.

The male also was present, but, as if wholly ~~un~~mindful of his three lady visitors, kept up his loud, far-reaching broadcast, now on his chosen tree, now on a nearby telephone pole. Such rudeness! But it was, perhaps, only another instance of uncontrolled instincts. At about 11:30 the male and one of the females flew away. The two remaining females chased each other about in a mildly belligerent fashion, spreading their tails and erecting their crown feathers, and at the same time uttering a weak "weechu-weechu." They followed each other about thus, along the larger limbs of the nest-hole tree as well as on another tree a few yards away. Jealousy was evident.

At 6:30 the third female had not returned. But the male had returned and was sitting with the two other females on a limb of his tree. At times these two females would go through their previously mentioned antics and "weech-weechu" toward each other. The male occasionally uttered his "chee-up"—in a bored sort of way. At 7 p. m. all three flew away.

*April 11.*—The male and the two remaining females were in and about the tree all forenoon. The male did not call so frequently to-day. At 1 p. m., all three were feeding on the ground not far from the tree. It rained for about half the time during the day. The third female has not yet returned.

This evening the male was clinging to the trunk just below and to one side of the nest-hole, looking very much depressed again. I first saw him thus some time after 5 p. m., and he did not move until 7:05 p. m., when he flew away. None of the females was about during this period.

*April 12.*—The male alone was at the tree this morning, and called at frequent intervals. No females appeared until afternoon. At 6 p. m., the male and one of the females were in the tree, the male occasionally chasing the female and performing by spreading his tail and bowing very deferentially. Later both flew away.

*April 13.*—The male and the two females were in and about the tree all afternoon. (No observations for the forenoon.)

*April 14.*—Two house-hunting Chickadees have on two occasions to-day looked into the nesting hole in the Flicker's tree. Their inspection was brief but competent and they passed on.

One of the female Flickers was on the tree trunk at 8 a. m., and later the second one arrived. These two and the male divided their time between the tree and the ground all forenoon. (No observations for the afternoon.)

*April 15.*—At 9 a. m., the male appeared at the nesting hole and began calling. At 10 a. m. one of the females arrived. Much of the day all the Flickers were away, and when present stayed only for brief periods. The day was chilly, with a strong north wind.

*April 16.*—At 8 a. m. the male was clinging to the trunk near the nesting hole and again looked overcome in one of his spells of profound dejection. No females were seen about the tree to-day.

*April 17.*—The male was at the tree a number of times during the day, but no females were seen.

*April 18.*—The male was present and called at intervals throughout the forenoon. At 12:40 p. m. the two females arrived, alighting in a nearby tree. The male immediately joined them and started chasing one of them. At 2:15 p. m. the male was clinging to the trunk again in deep dejection. The females had left.

*April 19.*—The females were absent to-day; likewise the male for most of the day, but at noon he arrived and called for a time. A very disagreeable day, with a strong southwest wind.

*April 20.*—The male alone at the tree at 7 a. m., calling. Rain ing. At 2:30 p. m. the male and one of the females were in the tree. Still raining.

*April 21.*—The male called from the tree early this morning. I saw no females about the tree to-day, but I was away much of the time and my observations pertain only to the morning and evening periods.

*April 22.*—The male began calling from his tree at 8:30 a. m. Later in the forenoon he started chiseling a new hole in a tree a few rods distant. This hole was only about six or seven feet from the ground. He flies back to his first tree now and then, looking into the nest hole with a critical air as if the idea had occurred to him that this hole might not, after all, be as desirable as he had supposed. No females were seen about the tree to-day.

*April 26.*—Since the 22nd the male has been present at his tree more or less each day, but no females have been seen until this morning, when one of them returned; and the male did some courting. The male to-day started another new hole, this one about two feet below and a little to one side of the original one. However, he soon gave up the attempt.

*May 2.*—The Flickers seem to be deserting the tree. Occasionally the male has been present to-day and uttered his ringing call, as if making a few last efforts, but only for short intervals. Then he flew away. He has done no more work on either of the new holes he started.

*May 4.*—The male and one of the females unexpectedly returned to the tree to-day—and mated.

*May 5.*—The male is inside the nesting hole—for the first time since these observations began. Preparations for house-keeping evidently are progressing rapidly.

This, then, was the rather abrupt but nevertheless successful conclusion of a Flicker affair that in the last few days of the period of my observations I had begun to think was about to end in failure. But the acquisition of a mate by this Flicker was an undertaking that required practically an entire month. As early as the

fourth day he had, by effective broadcasting, succeeded in attracting no less than three good "prospects." One of these entrants in the elimination contest, so to speak, withdrew early. Each of the remaining two was of the determined kind, apparently; neither would yield, and a deadlock threatened. The male, meanwhile, from all appearances, assumed a neutral, wholly impartial attitude toward the two rivals. He even went so far as to continue to broadcast his advertisements, as if serving notice that he felt under no obligation to restrict his choice—if he really had any choice—to these two. But no further candidates responded, and the purpose of his behavior was questionable—as seems to be true of course of much instinctive action among animals.

Then something seems to have happened, an amicable settlement or some sort of compromise between the two rivals, seemingly; and the swain, true to his previous impartial if not indifferent attitude, accepted the arrangement without murmur. Thus in Flicker world, too, it would appear that the darkest hours are sometimes those that herald the dawn.

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NOTES ON THE DISTRIBUTION OF SOME WISCONSIN  
BIRDS. II.BREWER'S BLACKBIRD (*EUPHAGUS CAROLINUS*).

BY A. W. SCHORGER.

*Plate XVII.*

THE presence of Brewer's Blackbird in Wisconsin previous to the years 1926 and 1927 was rare. The recent extension of its range is quite remarkable. Roberts<sup>1</sup> dwells on the expansion of this species in Minnesota during the last half-century.

References to Brewer's Blackbird in the literature are few. Kumlien and Hollister<sup>2</sup> state that the only known case of nesting took place at Lake Koshkonong in June, 1862; and that two or three specimens had been taken there in the last sixty years. King<sup>3</sup> took a male in July in a marsh east of Princeton, Green Lake County.

The year 1926 marked the beginning of the influx. On June 9 of that year, Mr. John Main<sup>4</sup> found a pair nesting in the Lake Wingra marsh at Madison. The nest contained three young. Ford<sup>5</sup> subsequently published a note, on data furnished by Mr. A. J. Franzen, that extended the breeding range to Walworth County, Wisconsin, and on to the vicinity of Waukegan, Illinois. The first record for Walworth County was in 1926 also, Mr. E. G. Wright having collected a male there on May 29. In 1928, Eifrig<sup>6</sup> mentioned casually that Brewer's Blackbird was a common summer resident near Hayward, Sawyer County.

Through the courtesy of various correspondents, it is now possible to state that Brewer's Blackbird is at present a common summer resident, breeding in a narrow area extending from Polk County in the northwest, to Walworth County in the southeast. In Polk County, Rev. P. B. Peabody has found Brewer's Blackbirds nesting at the edge of the Sawyer tamarack swamp. A colony of seven birds was found in May, 1930, and a nest with young was located. The colony increased to twelve pairs in 1931.

<sup>1</sup> Roberts, T. S. 'The Birds of Minnesota,' 1 (1932), 71; 2, 314.

<sup>2</sup> Kumlien, L. and Hollister, N. 'The Birds of Wisconsin,' (1903) 89.

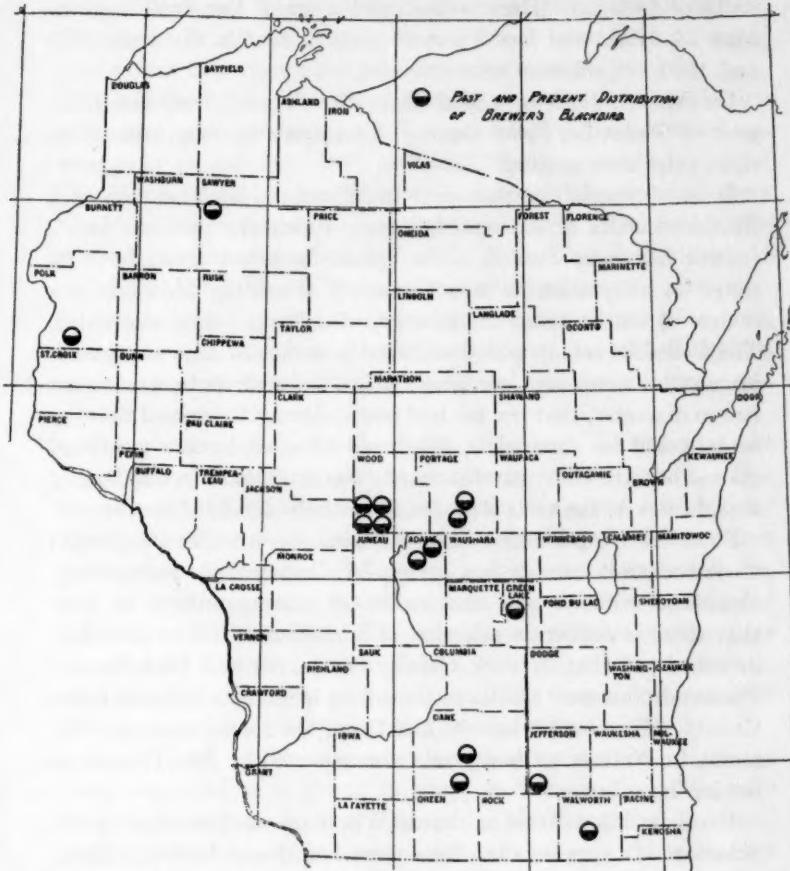
<sup>3</sup> King, F. H. 'Geology of Wisconsin,' 1 (1873-1879) 551.

<sup>4</sup> Main, J. S. 'Auk' 43 (1926) 548.

<sup>5</sup> Ford, E. R. 'Auk' 47 (1930) 565.

<sup>6</sup> Eifrig, G. 'Wilson Bull.' 40 (1928) 216.

I am indebted to Mr. F. J. W. Schmidt of the Wisconsin Conservation Department for very full notes on the occurrence of the species in the central portion of the state. He estimates that there are 500 birds in Wood, Portage, Adams and surrounding counties.



Near Babcock, Wood County, he found numerous small colonies of six to twelve birds in the years 1931 and 1932. Two colonies were found also in Portage County and two in the northeastern corner of Adams County.

The Lake Wingra marsh at Madison was unoccupied in 1927

and 1928 but since then a few pairs have nested yearly. I found three pairs there in the spring of 1932.

In Walworth County, Mr. A. J. Franzen of the Field Museum has found Brewer's Blackbirds nesting in a marsh eight miles north of Delavan. Here he collected a set of four fresh eggs on May 28, 1928,<sup>1</sup> and found several pairs present in the years 1929 and 1930. Specimens were collected.

On May 5, 1932, in a field along the Sugar River, two miles west of Belleville, Dane County, I located a marshy area where eight pairs were nesting.

It is of special interest that in Wisconsin, at least, Brewer's Blackbird nests in dry marshes from which the previous year's growth has been burned. The species is noted throughout its range for adaptation to a wide variety of nesting sites, but in a review of the literature no mention of a burned area was noted. The Belleville colony was established in a burned area of approximately five acres that contained a few isolated spots, five to ten feet in diameter, that the fire had not touched. I assumed that the nests would be situated in the cover afforded by the unburned places, but the most careful search was fruitless. In the burned area, however, the nests were found, entirely devoid of cover.

Since the Wingra marsh is burned annually, it seemed important to determine if burning is a prerequisite to nesting. Fortunately, abundant evidence was obtainable by correspondence to show that there is deliberate selection of burned areas. Rev. Peabody informed me that in Polk County the marsh had been burned. The conditions were similar to those long familiar to him in Kittson County, Minnesota, where he had found the species nesting. The marsh in Walworth County was also reported by Mr. Franzen as having been burned.

Excellent information on central Wisconsin was furnished by Mr. Schmidt. It appears that there were few if any Brewer's Blackbirds in the region prior to 1931, there having been only a few local burned areas. In 1930, approximately 400 square miles of sand and peat land were burned over. In the spring of that year a fire raged from the east side of the Yellow River as far south as New

<sup>1</sup> According to Mr. Franzen, the date June 3, 1928, given by Mr. Ford, *l. c.*, is incorrect, due to a misunderstanding.

Miner, Juneau County. The area burned in September, 1930, would be bounded roughly by a line drawn from City Point to Pittsville, Babcock, Mather, and back to City Point. The nesting colonies in Portage County were two miles north and three miles west of Bancroft where several patches of peat burned in 1931. The flocks in Adams County were likewise nesting in a burned peat marsh two miles north and ten miles west of Hancock.

It is difficult to offer a satisfactory explanation for the selection of burned areas for breeding. The most logical reason would appear to be greater relief from enemies. Skunks, weasels, and other vermin would tend to hunt least on land devoid of cover since there would be less chance of finding their usual prey. This hypothesis is weak in view of the fact that in the Belleville marsh Bobolinks and Short-billed Marsh Wrens were nesting commonly in the unburned sections. A particular food arising from burning the grass cannot be a factor, since from my experience Brewer's Blackbird feeds by preference on cultivated land, and food for the young was always brought from a distance.

Observations made on the Belleville colony showed that the nests were concealed as well as the terrene would permit. This marsh consisted of hillocks, and was sparsely studded with willows and alders only two to three feet high. On May 14, I found four nests, all of which were placed in the "valleys" between the hillocks, and six to twelve inches from their tops. At the proper angle, the eggs were plainly visible. The new growth of grass at this time was slight. I found a nest on July 2, probably a second attempt, that was an exception to the above. The vegetation was now luxuriant and the nest was placed on the top of a hillock.

The Wingra marsh in general is smooth in surface. Here the nests examined were placed in slight cavities so that they were level with the ground. A nest found by Mr. Schmidt at Babcock, May 31, 1931, was on the bare ground and level with it; and another found May 30, 1932, was placed on the bare peat, but not in a hole, under the top of a fallen aspen.

Of the four nests found at Belleville on May 14, 1932, one contained two eggs and one Cowbird's egg; two, four eggs; and one, five eggs. I collected the set of five eggs on May 16 and found that they were incubated about eight days. On the 20th, a fifth nest

was found containing five young about five days old, indicating that deposition of eggs began the first of the month. A nest found in the Wingra marsh on May 21 contained three eggs. Another nest found at Belleville on July 2 contained one egg and two callow young. Only one bird survived and this is shown in the accompanying photograph taken July 9. The young grow rapidly as this bird had left the nest by the 16th. It was in the immediate vicinity as the parents were present and showed the usual concern. All the other Brewer's Blackbirds had left the marsh.

The nests were constructed of brownish black grass and rootlets and were lined with stiff grass and hair. The inside dimensions of the four nests measured were remarkably uniform, averaging 4.0 by 3.5 inches at the top and 2.4 inches in depth. The colors of the eggs and nesting material blend so well with the background that the nests are not easily detected though in plain sight. In two cases the females flushed when I was about ten feet from the nest; in all others, the nests were found by search.

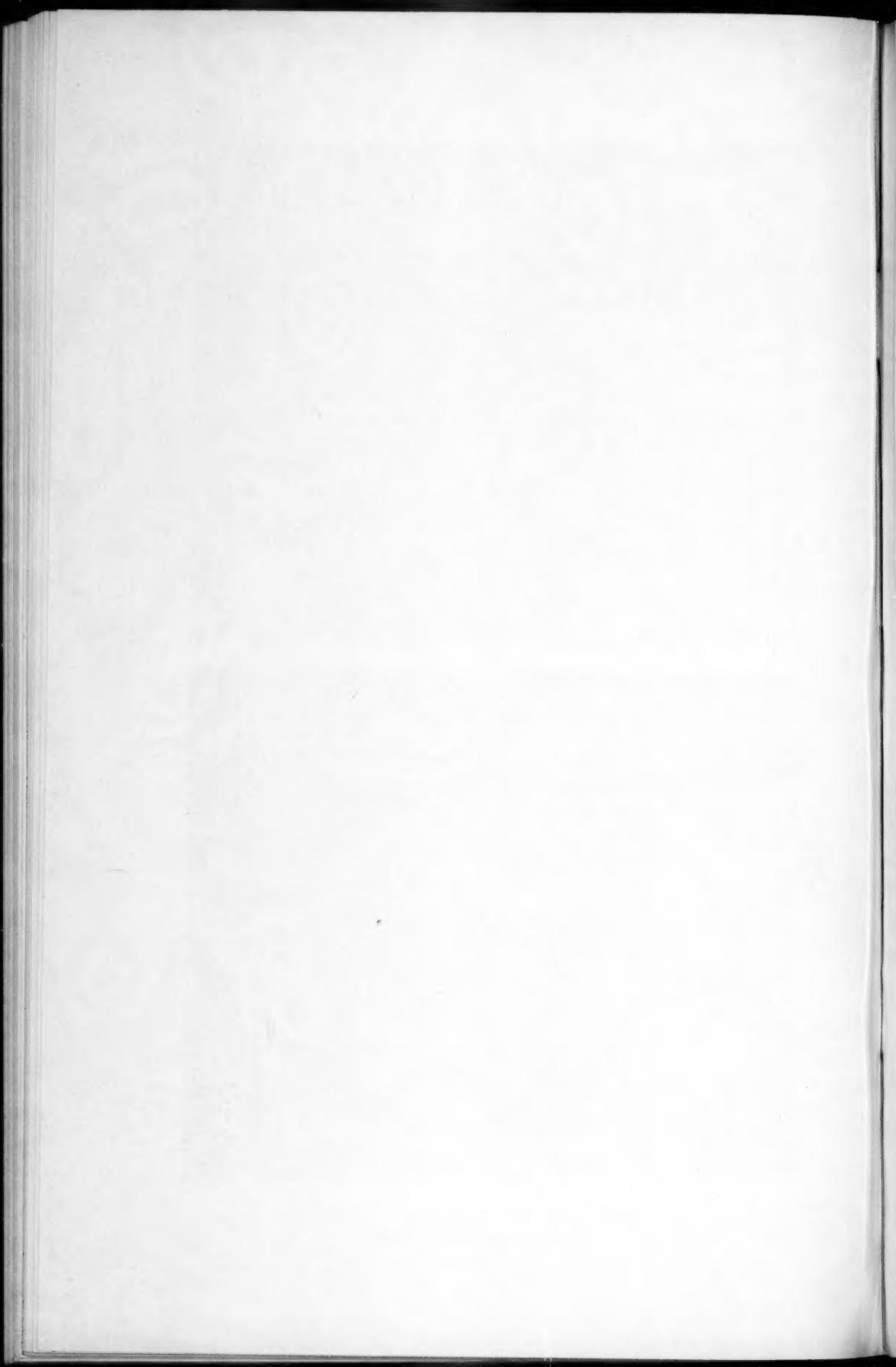
On entering the marsh, the males fly over and around the intruder a few times uttering the characteristic "tchick." We are lacking in consonants that can express the exact tone. They soon disperse and are joined by most of the females. In a few minutes all of them have settled on the bushes and continue their listless protest which is accompanied in both sexes by raising and spreading the tail. When the nest contains young, the parents will remain in its vicinity though the observer is only fifty feet distant. By remaining partially concealed, the exact location can be determined readily.

In one case a male, apparently through nervousness, varied its notes from the "tchick" to a peculiar, low "belching" or gulping note; and even uttered the familiar musical "turulee." The song is indistinguishable from that of the Rusty Blackbird. When the young, barely able to fly, are hidden in the grass, the female in bringing food does not approach them directly. There is much preliminary flying back and forth from one perch to another. Whether the low "sweee-sweee-sweee" uttered by her is a warning note or a demand call for the young bird to indicate its location was not determined.

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NEST AND EGGS OF BREWER'S BLACKBIRD.  
YOUNG BIRD EIGHT DAYS OLD



## SHORT NOTES ON SOME NEW ZEALAND BIRDS.

BY H. G. DEIGNAN.

DURING the first fortnight of June, 1932, I enjoyed the interesting experience of visiting the North Island of New Zealand, paying especial attention to the bird-life of the country. To one who has just come from the forests and plains of Australia with their abundance of birds, it is something of a shock to see the denuded and over-grazed hills of the North Island, and to walk through large areas of the "native bush" without hearing or seeing a native bird. It is an unpleasant surprise to find the native forests vanishing before the onslaughts of the axe and of introduced herbivores and with the forests the birds whose survival hangs on their continued presence, to be replaced with government-planted stands of eucalypts and boreal conifers, inhabited by Chaffinches and Song-Thrushes!

New Zealand, as is well known, is the Paradise of Acclimatization Societies, whose activities suffer no restraint by the Dominion Government, and scarcely a year passes without some new importation to harry further the native biota; this year it is the Chukar and the Nightingale. It is unhappily true that in all countries the view is held that the natural life of a land is the possession of its people, to be protected or destroyed at will. It might more justly be considered, ignoring the right to life of the creatures themselves, that the flora and fauna of any part of the world belong to mankind as a whole and are merely held as a trust by the inhabitants of the particular region.

Of late years certain places have been set aside by the Dominion Government as wild-life sanctuaries. Owing to the prevalence of introduced predatory mammals such as weasels and stoats, to say nothing of feral dogs and cats, such refuges, to be successful, must be on islands off the coast. This means that in many cases birds which need protection must be introduced to the sanctuaries from the mainland. A particularly bad mistake was made in establishing the Weka on Kapiti, when a male of *Gallirallus greyi* and a female of *Gallirallus australis* were released together!

Through the courtesy of the Honorable the Minister for Indus-

tries and Commerce I obtained a permit to visit the sanctuary of Little Barrier Island, where native birds of many species are still numerous, but owing to a protracted northerly gale which precluded any possibility of landing on the island, I was unable to avail myself of this privilege in the time at my disposal.

It must be remembered that at no time had New Zealand a large representation of land-birds, and that, due to the inclemency of the winter weather, I did not visit the wilder South Island, where more birds might have been seen. However, I travelled over a great portion of North Island, and, wherever possible, went out of my way to places where native birds were said to occur. It will be noted that in almost every case where I found a species numerous, it was either a marine form or a bird which is common or abundant in Australia or elsewhere, and hence possessed of no especial interest as a New Zealand bird.

It may be well to give a brief account of the localities mentioned in the following notes, for the benefit of those unacquainted with New Zealand geography. Wellington, as is well known, lies on the cliff-bound shore of Cook Strait. The city is confined between the harbor and a range of steep grass-covered hills. No native land-birds were seen, though European forms were numerous, and certain water-fowl were common in the harbor.

Auckland, some three hundred miles north of Wellington, is placed on the narrow isthmus between Hauraki Gulf and Manokau Bay. The vast mudflats of Manokau were, according to Buller, the winter home of large numbers of Wry-billed Plover and other interesting waders, and probably, even to-day, support many migratory shore-birds during the northern winter. I found only three species, one of them represented by a solitary example. Three or four native birds can be seen on the Auckland Domain, a large park surrounding the new War Memorial Museum of natural history. This elegant building placed on a hilltop is the first and last sight of New Zealand to those entering or leaving Auckland by sea.

Titirangi, in the Waitakeri Hills, is a large tract of almost virgin forest belonging to the people of Auckland, and about twenty miles distant by motor-car. The native flora and fauna are here protected by law, but the Kiwi, though formerly common, has not

been reported for years, and, excepting a few Pigeons and rather a lot of Tuis, no unusual birds were seen.

Leigh is a hamlet on the east coast some fifty miles north of Auckland and the place of embarkation for the Little Barrier by the bi-monthly mail-boat. The shore rises in steep, high cliffs from the sea and there are numerous reefs. A few miles above is a long, wide beach of white sand, Pakhare. The inland hills have been long cleared for grazing, but a few tiny patches of bush, completely devoid of bird-life, persist in the hollows and gulleys. Native land-birds were almost absent, and confined to a few common species.

Rotorua, the capital of the thermal districts, is in the north centre of the Island. Probably at no time, in this region of geysers, hot lakes, boiling springs, lava, and other evidences of volcanic activity, were birds numerous, but, thanks to the prohibition of shooting on the Government lands, certain species not seen elsewhere proved to be rather common.

Mamuku is a village about ten miles from Rotorua, surrounded by native bush, and here in small numbers were seen eight species of bush-birds. At no other place did I find so many species. As lumbering is the chief pursuit in the neighborhood, it is probably only a question of time until the birds disappear from here too.

The Tongariro National Park embraces the country about the active volcanoes, Ruapehu, Ngauruhoe, and Tongariro. A fine hotel has been built near timberline by the Dominion Government. Although, at the time of my visit, the country was under snow, certain European birds were common up to the limit of trees, and at least two native species were exceedingly numerous.

1. *Podiceps rufopectus*. NEW ZEALAND GREBE.—Two seen on Lake Rotomahana near Rotorua.

2. *Daption capense*. CAPE PIGEON.—Common in the Tasman Sea and in Cook Strait.

3. *Macronectes giganteus*. GIANT PETREL.—Fairly common in Cook Strait; one followed the ship into Wellington Harbor.

4. *Pachyptila* sp. PRION.—Birds of this genus were abundant in the Tasman Sea.

5. *Diomedea exulans*. WANDERING ALBATROSS.—Very common in the Tasman Sea and Cook Strait; one followed the ship into Wellington Harbor.

6. *Thalassarche melanophrys*. BLACK-BROWED ALBATROSS.—This was the commonest bird seen in New Zealand waters, excepting the Prions.
7. *Phalacrocorax carbo*. COMMON CORMORANT.—This Cormorant is common everywhere, in spite of the price on its head. Owing to its wariness, harmless species are usually shot in its stead by the bounty-hunters.
8. *Phalacrocorax varius*. PIED CORMORANT.—This common Australian bird is equally common on the New Zealand coasts.
9. *Phalacrocorax brevirostris*. WHITE-THROATED CORMORANT.—About a dozen were seen on a small pond in the suburbs of Auckland.
10. *Morus serrator*. AUSTRALIAN GANNET.—Seen daily in small numbers at Leigh.
11. *Casarca variegata*. PARADISE DUCK.—Two pairs of this handsome Sheldrake were seen resting on the shore of Lake Rotomahana near Rotorua. They showed no concern when the launch passed within thirty feet of them.
12. *Anas superciliosa*. GRAY DUCK.—This Duck appeared to be common everywhere. Several wild pairs live with domestic Mallards on a tiny pond in the Auckland Domain.
13. *Spatula rhynchos*. AUSTRALIAN SHOVELLER.—One female was seen on a small pond near Auckland with Gray Ducks.
14. *Nyroca novae-seelandiae*. NEW ZEALAND SCAUP.—Several hundred Scaups were seen on Lake Rotorua.
15. *Hydroprogne caspia*. CASPIAN TERN.—Common along the coast north of Auckland.
16. *Sterna striata*. WHITE-FRONTED TERN.—Large flocks were seen daily near Leigh, resting on the reefs.
17. *Larus dominicanus*. SOUTHERN BLACK-BACKED GULL.—This fine Gull is abundant along the coast and in the harbors.
18. *Larus novae-hollandiae*. SILVER GULL.—Common on the coast and also inland. Flocks may be seen feeding in fields and on the lawns of city parks.
19. *Charadrius bicinctus*. BANDED DOTTREL.—Hundreds of these Plover were found on the great flats of Manokau Bay at low tide.
20. *Limosa lapponica*. BAR-TAILED GODWIT.—One was seen at Manokau Bay.
21. *Himantopus leucocephalus*. WHITE-HEADED STILT.—Stilts occurred in hundreds at Manokau Bay.
22. *Gallirallus greyi*. NORTH ISLAND WEKA.—At Leigh, while investigating hollow logs, on the off-chance of a Kiwi, I drew forth from one the mummified corpse of a Weka, probably the victim of a weasel. A pair was said to occur in a mangrove swamp a few miles from the village, but I saw nothing of them. However, I was so fortunate as to see, while at Leigh, a wild bird, which was in the habit of coming into a dooryard to take food from a man's fingers, in spite of the presence of nine cats in the garden. The bird could not be touched and kept a watchful eye on the

felines; it ran back into the bush at the approach of strangers. The people of the house told me that a pair of Blue Penguins bred in the garden under an overturned boat last year.

23. **Porphyrio melanotus.** NEW ZEALAND PURPLE GALLINULE.—This species was numerous at a pond near Auckland.

24. **Demigretta sacra.** REEF HERON.—Birds in the gray phase are common along the coast and one was seen regularly on a buoy in Wellington Harbor.

25. **Botaurus poiciloptilus.** AUSTRALIAN BITTERN.—One was seen from the bus at a marshy place beside the Rotorua-Taupo highway.

26. **Phasianus colchicus** × **P. torquatus.** PHEASANT.—Common about Leigh.

27. **Synoicus australis.** BROWN QUAIL.—Two coveys of this Australian bird were seen near Leigh.

28. **Callipepla californica.** CALIFORNIA VALLEY QUAIL.—Common everywhere where conditions are suitable, often entering gardens.

29. **Hemiphaga novae-seelandiae.** NEW ZEALAND PIGEON.—Only two of these lovely Pigeons were seen at Titirangi, although they were said to be numerous.

30. **Circus approximans.** NEW ZEALAND HARRIER.—It is pleasant to record that, in spite of bounties and constant persecution, this widely distributed species is really common throughout the Island.

31. **Ninox novae-seelandiae.** NEW ZEALAND OWL.—One was seen on a wooded cliff at Leigh, being mobbed by Fantails. Of another, near timberline in the National Park, I was able to secure good photographs.

32. **Halcyon sanctus.** SACRED KINGFISHER.—This species has become commoner with the clearing of the bush. It is frequently seen perched on telegraph poles along country roads.

33. **Acanthisitta chloris.** RIFLEMAN.—Rather common in the Mamuku bush, and the commonest bird in the forest at high elevations in the National Park. In appearance and notes it is reminiscent of the Golden-crowned Kinglet.

34. **Anthus novae-seelandiae.** NEW ZEALAND PIPIT.—The Pipit has benefited by the spread of cultivation and is common on country roads and along the beaches.

35. **Pseudogerygone igata.** GRAY WARBLER.—This bird was common in the Domain at Auckland and was seen at most of the localities visited.

36. **Petroica toitoi.** NORTH ISLAND TIT.—I saw a number of these charming birds at Mamuku along the roadsides and amongst fallen trees where the bush had recently been cleared.

37. **Miro longipes.** NORTH ISLAND ROBIN.—I found one pair of these attractive birds in the dense forest at Mamuku. They stayed close to the ground and were very inconspicuous in the deep shade.

38. **Rhipidura flabellifera.** GRAY FANTAIL FLYCATCHER.—This was the commonest land-bird at all localities visited. They were equally numerous in gardens and forest.

39. *Mohoua albicilla*. WHITEHEAD.—A flock of about thirty was seen at Mamuku near the edge of the forest, later flying in twos and threes across the road into a patch of second-growth.
40. *Zosterops halmaturina*. SILVER-EYE.—The self-introduced Blight-bird is a common dooryard bird throughout the country.
41. *Prosthemadera novae-seelandiae*. TUI.—The Tui has benefited by the introduction of eucalypts. It was fairly common at Titirangi and a few were seen at Leigh.
42. *Anthornis melanura*. BELL-BIRD.—Two were seen at the edge of the bush at Mamuku.
43. *Chloris chloris*. GREENFINCH.—Common everywhere.
44. *Fringilla coelebs*. CHAFFINCH.—Very common throughout, even at high elevations and in dense forest.
45. *Acanthis* sp. REDPOLL.—Common about the hot springs at Rotorua.
46. *Carduelis carduelis*. GOLDFINCH.—In large flocks and abundant.
47. *Passer domesticus*. HOUSE WEAVER.—Abundant everywhere.
48. *Emberiza citrinella*. YELLOW-HAMMER.—Very common.
49. *Turdus philomelos*. SONG THRUSH.—Abundant throughout the Island. One flew aboard the ship in the Tasman Sea two hundred miles west of New Zealand.
50. *Turdus merula*. BLACKBIRD.—Abundant.
51. *Prunella modularis*. HEDGE ACCENTOR.—Few were seen, but probably many were overlooked.
52. *Alauda arvensis*. SKY LARK.—Oliver says that "the Skylark is reckoned the most destructive pest after the Sparrow. It is quite a common bird and therefore especially troublesome to farm and garden crops." Unfortunately, many of the country people confuse the Lark with the Ground-Lark (Pipit) and blame the latter for the other's depredations. That the Larks planted in the United States did not survive may be reason for congratulation.
53. *Sturnus vulgaris*. STARLING.—Abundant everywhere.
54. *Gymnorhina hypoleuca*. WHITE-BACKED CROW-SHRIKE.—A small colony of these fine singers inhabited a wooded ravine near Leigh.

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REDISCOVERY OF RHOPORNIS ARDESIACA (WIED).<sup>1</sup>

BY ELSIE M. B. NAUMBURG.

PERHAPS the most interesting bird obtained by Kaempfer while collecting for The American Museum of Natural History in Bahia, southeastern Brazil, in 1928, was a female of *Rhopornis ardesiaca* Wied. which proves to be the only specimen in any museum.

It is true that when Maximilian, Prince of Wied found and described the male of this species, in 1831, he also described what he thought was the female of the species and stated that his specimens came from southeastern Brazil without specifying an exact locality. His description of the female does not fit our specimen and it would appear that it belongs to an entirely different species.

Kaempfer obtained this female specimen at Boa Nova (alt. 2600 ft.), Lat. 14.32° S.; Long. 40.18° W. while at Ituassu (alt. 3000 ft.), Lat. 13.43° S.; Long. 41.24° W. he secured an unsexed specimen which is a typical male. The structural details and general distribution of colors agree so well that it is evident that they represent the sexes of a single species while Wied's description of the female evidently applies to a very different bird.

He states that the upper parts are pale grayish brown, more grayish on the pileum and mantle, more fulvous on the rump and greater upper wing coverts which are edged with pale fulvous brown. The under parts are described as light fulvous, darker on the breast. We know that his travels were confined to the coast of southeastern Brazil with short trips inland all of which has been clearly outlined on an excellent map which appears in an article on the Prince of Wied by Dr. Amaral, in the 1931 issue of the Bulletin of the Nacional Museum of Rio. Kaempfer's locality, Boa Nova, is in the region covered by Wied's travels and we suggest that it be designated as the definite type locality of the species.

The identity of the bird that he described as the female of *Rhopornis ardesiaca* still remains to be determined. After running through the Ant Birds the only description that even slightly resembles Wied's description is *Pyriglena leucoptera* from the Serra

<sup>1</sup> Read before the American Ornithologists' Union Semicentennial Anniversary, November, 1934.

do Itatiaya, the female of which is fulvous brown; tail blackish, lengthened, and cinereous brown beneath; bill much compressed. As this is hardly sufficiently like the bird described by Wied the identity of the latter must remain a mystery.

A résumé of the published history of Wied's "*Formicivora ardesiaca*" following his original description follows.

In 1835 Ménétries<sup>1</sup> says he has taken his description of the female of *Formicivora ardesiaca* from the Prince of Wied, and that the bird is very rare and he has never seen it.

As early as 1847 Cabanis<sup>2</sup> started the error of synonymizing *Myiothera ardesiaca* and *Hypocnemis myiotherina*.

Burmeister<sup>3</sup> in 1856 confounded the two birds in his description as well as in his text, the result being a hypothetical composite species.

In 1858 Mr. Sclater<sup>4</sup> placed Wied's *Myiothera ardesiaca* in his list of species not recognized, but while generally synonymized by both Allen and Sclater with *Hypocnemis myiotherina*, Sclater said he did not believe *Myiothera ardesiaca* of Prince Maximilian to be the same as this species, and that he had never seen specimens of it. In his Catalogue<sup>5</sup> it is apparently not mentioned at all.

J. A. Allen<sup>6</sup> in 1889, in his article on Maximilian's Types of South American Birds, lists the bird under *Hypocnemis myiotherina* and says that although Wied ascribes the specific name to Lichtenstein, *Myiothera ardesiaca* Licht. was doubtless merely a manuscript name which Lichtenstein adopted.

In 1891 in 'Further Notes on Maximilian's Types,' etc., Allen<sup>7</sup> says "It has been found that the type of Maximilian's *Myiothera ardesiaca* was wrongly referred to *Hypocnemis myiotherina* Spix from which it proves to be even generically distinct, and also not referable to any of the commonly recognized genera." So he described a new genus calling it *Rhopocichla*, and was obliged to give Wied's description of the female because he had never seen one.

<sup>1</sup> Ménétries, Mem. Ac. Sc. St. Petersb., 1835, Vol. III, Part 2 (Sci. Nat.), 5th Ser., p. 507 (ex Wied).

<sup>2</sup> Orn. Nat. in Wiegmann, Arch., 1847, Vol. I, p. 210 (in part).

<sup>3</sup> Thiere Bras., 1856, Vol. III, p. 65 (part).

<sup>4</sup> P. Z. S., 1858, p. 288.

<sup>5</sup> Bds. Brit. Mus., 1890, Vol. XV.

<sup>6</sup> Bull. Amer. Mus. Nat. Hist., 1889, Vol. II, p. 255.

<sup>7</sup> Bull. Amer. Mus. Nat. Hist., 1891, Vol. III, p. 199.

In 1902 in the 'Proceedings' of the Biological Society of Washington (p. 35), Charles W. Richmond said the name of *Rhopocichla* was first used by Oates in 1889<sup>1</sup> for an Indian Timeline bird two years before Dr. Allen proposed the name for Wied's bird.<sup>2</sup>

This earlier use of the name by Oates necessitated renaming Allen's *Rhopocichla* and Dr. Richmond proposed *Rhopornis*, type *Myiothera ardesiaca* Wied.

Ridgway in 1911<sup>3</sup> says his efforts have been handicapped by lack of many species desired for comparison, among which is *Rhopornis* (type *Myiothera ardesiaca* Wied).

It will be seen, therefore, that the female of this species has a curious history and apparently has not been seen by any of the writers who have referred to it.

*Rhopornis* is a well-marked genus. With *Pyriglena* it is clearly not identical, differing in its much longer, more depressed as well as more decidedly ridged bill, in the less stiffened, closely set and elongated lateral frontal feathers which form such a conspicuous feature in *Pyriglena*; in the narrower, apically slightly attenuated, not bluntly rounded rectrices; in its more slender tarsi and toes, and proportionately much longer, as well as more strongly graduated tail.

*Rhopornis* has many features in common with *Cercomacra* and *Myrmoderus* (*M. loricatus*). It recalls *Cercomacra* in the slate-gray coloration of the male plumage and the white wing-marking (though it lacks the white interscapular blotch). However, the tail is far more steeply graduated, the rectrices are apically rather attenuated instead of nearly squarely cut, the tarsi are much longer, the bill longer and basally less dilated, the frontal feathering shorter and less dense. Shape of bill and degree of graduation of tail very similar to "*Myrmoderus*" *loricatus*, but tarsus and tail much longer, while the pattern of coloration is quite different. The rather scanty frontal feathering is not unlike *Myrmeciza longipes*, and allies, but *Rhopornis* has no naked (bare) spots either below or behind the eye.

The female of *Rhopornis ardesiaca*, now for the first time described, differs from the male principally in having the top of the

<sup>1</sup> Fauna Brit. India Birds, 1889, I, p. 159.

<sup>2</sup> Bull. Amer. Mus. Nat. Hist., 1891, Vol. III, p. 199.

<sup>3</sup> Birds of North and Middle America 1911, U. S. Nat. Mus. Bull. 50, p. 10.

head and the hind neck tawny brown (between ochraceous tawny and cinnamon brown of Ridgway) forming a well defined cap; in the white instead of black chin and throat and in some minor characters. The back and scapulars are slightly shaded with brownish olive and a similar tinge is noticeable on the basal portion of the upper wing-coverts which are, however, marked with black and white in a similar way as in the male. The outer webs of the remiges are less grayish and more brownish; the lores are paler gray, the auriculars more conspicuously streaked with whitish and the gray of the breast and sides is paler. The flanks are washed with dull brownish olive and the middle of the belly is extensively whitish. The male measures: wing 73.5; tail 85.5; exposed culmen 19.5 mm. The female: wing 73.5; tail 85.5; exposed culmen 19 mm.

To sum up the acquisition of the female specimen enables us for the first time to accurately describe the female of *Rhopornis ardesiaca* while the data accompanying the male specimen provide a definite locality for the species.

*American Museum of Natural History,  
New York City.*

REDISCOVERY OF CONOTHRAUPIS SPECULIGERA  
(GOULD).

BY M. A. CARRIKER.

THIS rare Tanager was described by Gould from two males, which were collected by Hauxwell in 1852 supposedly on the Rio Ucayali, East Peru. The types are in the British Museum.

In 1856 Sclater (P. Z. S., 1856, p. 68) says: "Mr. Gould's types are the only specimens I have seen of this peculiar bird. They were collected by Mr. Hauxwell in August, 1852, upon the Ucayali and are marked Irides red. I rather doubt this being the true place (generically) of this species, but at present I am unable to indicate a better one."

Until 1880 nothing further was seen or heard of the species, when Stolzmann collected three specimens, all males, at Callacate, on April 20 and 22 and May 24. At this time Sclater erected a new genus to receive it, viz.: *Conothraupis* (Ibis. 1880, p. 252) and published a very good plate of the species.

As far as I have been able to learn, the above mentioned five skins (all males) are the only ones which have been taken up to April 1933, at this time I was engaged in collecting at Samne, Dept. de Libertad, West Peru, for the Academy of Natural Sciences of Philadelphia and was fortunate enough to again encounter this rare species, and in more abundance, securing eight males and three females, all fully adult birds in breeding plumage. Samne is a small village and mining camp in the valley of the Rio Moche, on the road from Trujillo to Huamachuco, at an altitude of 5000 feet, on the west slopes of the western cordillera of the Andes. The birds were all taken in one small valley opening into the valley of the Rio Moche, in which there is a rather abundant growth of shrubbery and low trees. The males were in full song and thus easy to locate, but the females were very shy and hard to find. The first specimen (a male) was shot in a thick fog and I had no idea what it was until I examined it carefully at the hotel.

A laying female was flushed from a steep slope, thickly overgrown with rank grass and weeds, above an irrigation ditch, and although I searched carefully, I could not locate the nest. I

suspect, however, that the nest is placed on or near the ground since no nests were found in the shrubbery which the birds frequented.

I have worked both to the north and to the south of this region, at the same altitude, but never saw the bird, from which I judge that it is very local in its distribution. It is rather unusual to find a species of this kind occupying both the west and east slopes of the western Andes in Peru, although it is not improbable that it may have crossed the range at the Porculla Pass (7000 feet) at some remote period.

Callacate, where Stolzmann secured his three males, lies in the upper Marañon Valley, at about 4000 to 5000 feet, just east of Chota, Dept. of Cajamarca. What I cannot reconcile is the apparent fact that the types came from the Rio Ucayali. There must have been some error in the labeling of those specimens since all the other known skins, including mine, came from a very arid region, where little rain falls, and it is not conceivable that any bird of this type would inhabit both the humid tropical jungle of the Ucayali and the arid subtropical zone of both slopes of the western cordillera. It is not at all improbable that the types actually came from near Samne, for there has been a well travelled trail through there for many, many years, running from Trujillo over the range to Huamachuco, both old Inca towns, and any one travelling over this trail at that time would have to spend the night at a small road house, then existing, near the present sight of Samne. I would therefore suggest that the type locality of this rare Tanager be designated as Samne, instead of the Rio Ucayali, which is, in my opinion, obviously erroneous. I give below a description of the female which has now been taken for the first time.

***Conothraupis speculigera* (Gould)**

*Diucopis speculigera* Gould, P. Z. S. London, 1855, p. 69.

Female. Upper parts dark brownish olive, darker on the pileum, more greenish and paler on the rump, and more brownish on the upper tail coverts. The feathers of the pileum and mantle have dusky centers, not wholly covered by the olive tips, which are more apparent on the pileum than on the mantle; wings sooty black, coverts and remiges broadly edged with the color of the

back; tail about Medal Bronze, with a slight olive wash and edged on the outer webs with brownish olive; lores dull yellowish green; a narrow eye-ring of pale yellow; cheeks and auriculars dusky olive; throat pale yellowish, whiter on the chin, and with a dusky olive malar streak; chest yellowish olive brown, obscurely striped with yellow; breast, abdomen and under tail coverts rich sulphur yellow, paler on the middle of the abdomen; sides and flanks dusky olive; lining of wing white; under wing coverts sulphur. Iris red-hazel; bill black, horn blue below; feet leaden blue.

*Academy of Natural Sciences,  
Philadelphia.*

### A PARTIAL LIST OF BIRDS OBSERVED IN HAITI AND THE DOMINICAN REPUBLIC.

BY R. M. BOND.

THE birds here listed are some of those noted on a limnological expedition to the island, lasting from February 5 to March 15, 1933. As will be observed, the greater part of the birds mentioned are aquatic, since they were of especial interest to me. I wish to take this opportunity to thank Mr. James Bond, of the Academy of Natural Sciences of Philadelphia, for going over this manuscript, and deleting the notes which were of no particular interest, and also those based on possibly faulty identifications. The order in which the list is arranged, and the scientific names are taken from 'Birds of Haiti and the Dominican Republic' by Wetmore and Swales (Bull. U. S. Nat. Mus. No. 152, 1931).

**Colymbus dominicus dominicus** Linnaeus. WEST INDIAN GREBE.—Haiti: Trou Caiman, February 15–17, several. Étang Saumâtre, February 18–28, six were to be seen at almost any time near Fond Parisien. Others were seen elsewhere on the lake. A female shot near Fond Parisien (February 21) was found to have the stomach filled with a green mass consisting mostly of its own feathers, but filamentous green algae, *Chara*, and the remains of several fish (apparently *Limia* sp.) were also present. The ovaries were undeveloped.

Dominican Republic: Laguna Rincón, March 5–9, two or three seen from the road. Lago Limón, March 8, two or three seen in the open water.

**Podilymbus podiceps antillarum** Bangs. ANTILLEAN GREBE.—Haiti: Oxbow of the Artibonite River, a few miles from the mouth of the river, February 14, half a dozen or more, diving, and apparently feeding. They were quite tame. Étang Saumâtre, February 18–28, seen in nearly every part of the lake, usually solitary, or in pairs.

Dominican Republic: Lago Enriquillo, March 5–8, a few seen, always solitary, often far from shore.

**Casmerodius albus egretta** (Gmelin). AMERICAN EGRET.—Haiti: Étang Saumâtre, February 24, not rare along shore near Glore and to the eastward. About 25 nests, most of them occupied, in trees on a small rocky island close to the north shore, about three miles east of Glore.

Dominican Republic: Lago Enriquillo, March 5–8, 10 or 12 visible at almost any time along shore about five miles west of Las Baitoas.

**Egretta thula thula** (Molina). SNOWY EGRET.—Haiti: Étang Saumâtre, February 24–25, a few pair nesting among the Egrets on the small

island near the north shore, and a few more pair nesting on a low island on the west side of the promontory which juts out from the south shore of the lake.

Dominican Republic: Lago Enriquillo, March 5-8, the most conspicuous bird about the lake. Flocks of three to fifty perched on dead trees standing in the water near shore, or flying over the lake. They were never observed to feed as the Egrets were feeding (standing in the shallow water), but only on the wing. When looking for fish, they fly slowly against the wind, with the neck almost completely extended. They usually fly from five to about thirty feet above the water, occasionally descending to within a few inches of the surface, and hovering awkwardly, while they thrust the head under water. (This method of feeding was not observed on the Étang Saumâtre.) I was told at Jimaní that they nest on the peninsula (formerly island) de Cabritos.

**Florida caerulea caerulescens** (Latham). WEST INDIAN BLUE HERON.—Haiti: Étang Saumâtre, February 18-28, along shore near Fond Parisien. A nest was in the process of building (first noticed February 22) in a white mangrove (*Conocarpus erecta* L.) and whenever it was approached, one or both birds would perch near me and scold. In a tree a hundred yards or more from the lake, near a spring much used by the natives for washing clothes, two young were seen. They were well grown (February 25). They were scared, but at the same time curious, and climbed about from branch to branch, coming closer when I was still, and retreating when I moved. A parent stood on a fence post thirty yards away, and scolded vigorously.

**Phoenicopterus ruber** Linnaeus. FLAMINGO.—Dominican Republic: Lago Enriquillo, I saw a flock of about 300 from an airplane, in July, 1931. They were flying west, and were about over the middle of the lake. Local reports said Flamingos were breeding at the southern end of Laguna Trujín, and that twenty or thirty appeared every three or four days to feed either at the west end of Lago Enriquillo or the east end of the Étang Saumâtre. I saw none myself during this last visit.

**Dendrocygna arborea** (Linnaeus). WEST INDIAN TREE DUCK.—Haiti: Trou Caiman, February 15-17, considerable numbers seen on the water and flying. Étang Saumâtre, February 18-28, several flocks seen flying over. Half a dozen were on the water near the south shore, close to where the Snowy Herons were nesting.

Dominican Republic: Laguna Rincón, March 5-9, a few were seen flying, apparently having just been frightened from the water by the noise of the car. Lago Limón, March 8, eight were flushed near shore. They were much tamer here than those seen elsewhere.

**Dafila bahamensis bahamensis** (Linnaeus). BAHAMA PINTAIL.—Haiti: Étang Bois Neuf, February 12-15, a flock of about thirty. They were rather timid, and by flying and swimming kept as far away as possible from my boat. As this pond seems to contain no animal life but some very small copepods and a great many corixids, it seems likely that the ducks were feeding on the latter.

Dominican Republic: Lago Enriquillo, March 7, four or five at the west end of the lake, in a flock of twenty to thirty Lesser Scaps.

**Pandion haliaetus carolinensis** (Gmelin). OSPREY.—Haiti: Étang Saumâtre, February 24, one flew low over my boat when I was in the central, narrow part of the lake. It hovered a moment, but did not dive. It was quite close enough to see the dark streak on the side of the head which differentiates it from *ridgwayi*.

**Falco columbarius columbarius** Linnaeus. PIGEON HAWK.—Dominican Republic: Lago Enriquillo, March 5, one was seen on the south shore, apparently much interested in some Yellow-legs. It did not succeed in catching one while I was watching.

**Charadrius nivosus tenuirostris** (Lawrence). CUBAN SNOWY PLOVER.—Dominican Republic: Lago Enriquillo, March 7, not at all rare on the salinas along the south shore of the lake, especially near the west end. They occurred singly or in very small groups, and none that was approached acted wounded, or particularly disturbed, so it was assumed that nesting was not in progress.

**Totanus flavipes** (Gmelin). LESSER YELLOW-LEGS.—Dominican Republic: Lago Enriquillo, March 5-8, Yellow-legs were seen all along the south shore of the lake in fair abundance. Two were collected about noon, March 8. The gut of one was entirely empty, and the gut of the other contained no identifiable remains except those of fish. As I took no crustacea (except minute copepods) and no insects in the lake, it seems possible that the *Totani* in that locality are all fish eaters. Several small flocks of this or the Greater Yellow-legs were seen flying over the Étang Saumâtre near Fond Parisien.

**Larus atricilla** Linnaeus. LAUGHING GULL.—Dominican Republic: Lago Enriquillo, March 5-7, seen flying over the lake singly or in twos about an hour or two before sunset.

**Aratinga chloroptera chloroptera** (Souancé). HISPANIOLAN PAROQUET.—Haiti: Fond Parisien, February 18-28, a pair of these birds was observed climbing in and out of a woodpecker hole in a fan-palm trunk about thirty feet above the ground. There was a considerable flock in the locality which made rapid and very noisy flights at such short intervals that they could be approached only with difficulty, though they were quite tame. The whole flock fed from time to time in a large *Ficus* growing in the middle of town. Flocks were observed in nearly every part of the island visited, but no nesting birds were observed elsewhere.

**Tyto glaurops** (Kaup). HISPANIOLAN BARN OWL.—Dominican Republic: Between Azua and Barahona, March 4. I left camp about half way between San Juan and Azua at about 3:00 A. M. and arrived in Barahona at 8:00. Just before, during, and after daybreak, half a dozen or more Barn Owls were scared up from beside the road.

*Osborn Zoological Laboratory, Yale University.*

LOSING THE BIRD SONGS.<sup>1</sup>

BY WILLIAM E. SAUNDERS.

A FEW years ago a book was published, with the title "When Life loses its Zest." What a title! Bird-lovers know nothing of any such period, and it is quite unnecessary to say that the author was not talking about ornithologists, but of the general public who do not take 'The Auk,' and do not belong to the A. O. U. The trouble with our members is the same as with an old friend of mine in London who is now over eighty, and who has been interested in nature all his life, and who states cheerfully that he has so much work ahead that he knows he can never catch up with it. His life surely has zest, yours has zest, and so has mine. We fortunate ones who take joy in the study of nature may well be the most envied of all men, and we should thank our stars that we have been led into such pleasant paths.

The annual meetings of the A. O. U. so neatly characterized by Mrs. Hoyes Lloyd as "Reunions," afford an opportunity of looking back, and among the many interesting things to consider, is the gradual failing of our hearing as it affects our ability as ornithologists. As age increases, people realize that they can not hear as well as formerly, and the present paper has to do with the failure of ability to perceive the songs of birds. If I may generalize from my own limited experience, I would say that loss of hearing may be measured by ornithological events with an accuracy that is almost uncanny, and as most of the members of the Union are likely to pass over the very trail that I am now treading, if they are not already on it, it is hoped that my experience will be at least informative.

It was at the age of sixty that I first noted my own inferiority to the younger men with whom I go a-birding, and the first notes that I missed were the tiny lisps of the Golden-crowned Kinglet and the Brown Creeper; which I lost at almost exactly the same time. I was commenting on this to my friend Henry Oldys at the Cambridge meeting, in 1923, and his prompt reaction was "Can you

<sup>1</sup> Read before the American Ornithologists' Union, Semicentennial Anniversary, November, 1933.

hear the Grasshopper Sparrow?" That question still stands as the only hint I have received from others as to what notes were soon to be lost. Henry Oldys had lost that Sparrow.

Those buzzy songs, apparently so much alike, have very different carrying powers, and that of the Grasshopper Sparrow is the very poorest of all. In character it appears to be closely comparable with those of the Golden-winged Warbler, Clay-colored and Savannah Sparrows, but, speaking solely from my own experience, the Grasshopper seems to have by far the least carrying power and in June 1933, at almost 72 years, I was unable to hear one at twenty yards, though I was watching him with the glass as he sang. While the tones of the Golden-winged Warbler impress me as being very similar, yet they carry to my ear very much better, and in 1933 I was able to hear one at nearly forty yards. Very similar is the song of the Clay-colored Sparrow, except in rhythm, but in 1932 I heard one at sixty yards, when I was compelled to be the finder, as my companion did not know the song. The last of these buzzers is the Savannah Sparrow and his song strikes my ear with good force at sixty yards, and I hear him very plainly as the car passes the fence post from which he is singing.

Turning to the lisping songs, even the most strident of the tones of the Golden-crown passed my ability entirely at the age of sixty-five, five years after I lost their tiny lisp. At that time I lost also the Cedar Waxwing, whose note is to most people a mere sibilant hiss. Very clearly comes to my memory a morning at Point Pelee one winter when both waxwings were present, and I diagnosed a note as that the Bohemian Waxwing, by its power and a vibrant tremolo which I thought I could detect, and the late James S. Wallace was quite complimentary over my success; but the Bohemian is so rare that I have hardly heard it since, and now it is of course, gone forever.

Turning to the Warblers, the Black and White has the poorest carrying power, or should I say, has the highest pitch, and it was lost at about sixty-seven, although in earlier years I had often commented to myself on the great distance at which I could hear this apparently trivial song. This year I had an ear test, and while I was found to have a competency of about 90% on the lower vibrations, when the tones went up into the thousands, my ability to hear them dropped towards zero very fast indeed.

In 1930, at sixty-eight years, I lost the songs of the Bay-breasted, Blackburnian and Cape May Warblers, and the lisp of the Tree Sparrow, and while the Blackpoll, Tennessee and Nashville Warblers remain with me, they are of course much fainter and audible at a much shorter distance. At that time, 1930, I watched a Cape May sing at about thirty feet directly over my head, and when he opened his bill and sang, I was unable to hear a single note. After the meeting of the mammalogists in Cambridge, in 1933, my brother F. A. Saunders, a member of the Nuttall Club, took me to Duxbury to see the Least Tern. On the way we heard several Black-throated Green Warblers, and my comparative inability to hear them was very evident. However, when the car stopped very near one, perhaps twenty-five yards, I remarked that I could hear that one all right, but what was the matter that he omitted the "daw" at the end of his song which has been rendered "See-saw-marg'ry-daw." But my brother said, "He does not omit it," and right there I realized the strange fact that although the second and last notes were apparently identical in pitch, there was an absence of power (shall we call it voltage?) which was so important that while I could hear the "saw" perfectly well, I was utterly unable to detect the "daw." It was difficult to believe one's ears, especially with such unreliable ones as mine, but it showed that poor ears have been able to detect nuances that had never been noted, or at least never recorded, by better ones.

The hard, stony call notes, probably on a lower pitch than those of the Warblers, I can still hear, and now, twelve years after I lost the Golden-crowned Kinglet's song, I am sometimes the first of a group to catch the "tick" of the Purple Finch, a note which I have always been inclined to regard as rather difficult to hear. This call-note bears some resemblance to those of the Ruby-crowned Kinglet, Myrtle Warbler, Indigobird, and Cardinal, but I can now state that they have, for me, very different powers. I have mentioned them in the order of their strength, and while I hear the Finch very well, the Myrtle and Ruby-crown less, the Indigo is quite soft and the Cardinal is audible at not more than ten or fifteen feet.

A host of songs remain with me, and though not with their primitive force they can still be well heard at good ranges, such as

the Song, Vesper and Fox Sparrows, and the Maryland Yellow-throat, all of which I can hear at 100 yards or more, the Brown Thrasher and Meadowlark at 150 to 200 yards, and just recently my companion was surprised when I heard the note of a Blue Jay at 50 yards, which she thought was quite soft, but the pitch was probably low. The little tinkling songs which the Tree Sparrow uses to entertain us while visiting here, are still available, though they certainly seem to be of little volume. It would be interesting if some one would evaluate accurately those tiny little notes, such as those of the Golden-crowned Kinglet, which sound like mere sibilant whispers, and which are the first to vanish from human ears.

The average human does not discriminate much between the various notes above the top of the piano, and when I received a demonstration of the *d*, *e*, and *f*, above *c* in alt., I found that they expressed nothing to me except a sibilant hiss, and the aurist who gave me the demonstration told me that I had an ear above the average, so perhaps it may be found that the pitch of a bird's note may be roughly judged by the period at which we lose it. It is quite unlikely that the data I have given will correspond exactly with the experiences of others, but it is hoped that they will at least give some idea of how soon certain bird songs may be lost to those who treasure them.

*London, Ontario.*

## GENERAL NOTES.

**Holboell's Grebe in Western Massachusetts.**—Following the very severe weather of early February, 1934, a number of Holboell's Grebes (*Colymbus griseogenus holboelli*) were found in western Massachusetts. There were not so many, nor were they so wide-spread, as in 1930, but about two dozen came to our attention. The flight seems to have occurred on the night of Feb. 12-13, but many of the birds lived, undiscovered, starving on the ice or snow, for nearly two weeks thereafter. On Feb. 13 one was found near Athol, and was banded and released in Millers River by Mrs. Robert Allison. The same day, another was picked up in Chester and kept in captivity (fed on minnows) till it died, March 3. On Feb. 14, others were found and freed in Chesterfield and Knightville. The eastern-most record was at Sterling, Feb. 23. We heard of Grebes at Williamstown, North Adams, Pittsfield (two), Lenox (six), Becket, and Huntington (two), and observed four that were lucky enough to find an unfrozen place in the Connecticut river in Holyoke and lived there for two weeks.—*AARON C. BAGG, Holyoke, Mass., and S. A. ELIOT, JR., Northampton, Mass.*

**Puffinus gravis in Virginia.**—On July 2, 1934, I found a dead dried specimen of this Shearwater on the beach at Cobb Island, Virginia. It is now entered in the skeleton collection of the U. S. National Museum as No. 322008.

Rives, in his 'Birds of Virginia,' cites this species in his hypothetical list and I have been unable to find additional records for it, which prompts me to call attention to the present specimen.—*PAUL BARTSCH, U. S. Nat. Mus. Washington, D. C.*

**Second Occurrence of the Yellow-nosed Albatross (*Thalassogeron chlororhynchos*) in Maine.**—A few days previous to July 23, 1934, George Walker, a small boy found a large water bird among the sedges by a brook in East Fryeburg, Maine, about forty miles from the nearest point on the coast. On being approached the bird made no effort to escape but allowed the boy to touch it, then fondle it, treatment which it seemed to enjoy. The boy carried it home, where it was placed in an enclosure with a large tank of water. Live fishes were placed in the tank, and the bird caught and ate them.

July 26 I was advised that the bird had died and been sent to Carl A. Garris to be mounted. At Mr. Garris' shop I examined it carefully and found it to be a female of this species; its plumage was spotlessly clean, and except that the extreme tips of the primaries were slightly worn, it was in perfect plumage. No injury was found when it was skinned. It was lean, but not emaciated. The following measurements were taken: wing 458 mm.; tail 192 mm.; culmen 117 mm.; depth bill at base 50 mm.; tarsus 75 mm.

This is the second known occurrence of this species in Maine, the other being a bird of undetermined sex taken August 1, 1913 "near [Machias] Seal Island off Machias Bay."<sup>1</sup> In the original record, it is also stated, (erroneously), that "Seal Island is Canadian territory and since the locality in which the bird was killed, is on the international border south<sup>1</sup> of Grand Manan, the record constitutes an addition to the local avifauna of both New Brunswick and Maine."

It should be pointed out, that Machias Seal Island is United States territory, as I have shown elsewhere,<sup>2</sup> though by a provision of the Ashburton treaty, the navigation signals on the island are owned and maintained by the Dominion of Canada. According to charts at hand these islands are well to the westward of the boundary, and Machias Bay is more than twelve miles to the northwestward of the "Seal Islands" as the small island<sup>3</sup> and its two dry ledges are frequently called by local fishermen. The Seal Island is not south, but west by north, twelve miles distant from Southern Head, Grand Manan. Southern Head is the nearest and southernmost approach of the Seal Island to Grand Manan.

That this bird had passed along the entire coast of Maine, from Portland to the vicinity of Machias Bay seems quite certain.

The late Evan D. Rackliff of Peak's Island, told me that on one of his trips to the Cod Ledges, earlier in the summer, an Albatross came very near his boat. He was a careful observer, exceptionally well acquainted with the sea birds in life, and scrupulously truthful. He was positive that this large bird, with its long thick bill, and long narrow wings was not a Black-backed Gull (well known to him), a Gannet nor a Pelican. No one acquainted with Mr. Rackliff's ability to distinguish the characteristics of birds in flight would doubt the correctness of his observation.—ARTHUR H. NORTON, *Museum Natural History, Portland, Maine.*

**Brown Pelican in Delaware.**—A Brown Pelican (*Pelecanus occidentalis occidentalis*) was seen on May 30, 1934, in Rehobeth Bay, Delaware, about a mile off Indian River Light, by Robert W. Schofield. When approached "to within easy gun shot" it flew about half a mile and settled again. Mr. Schofield is a wholesale lumberman with mills at several points in the South and is thoroughly familiar with the Pelican. He says that he never before saw one north of Georgia but that there is no question as to the identification of this individual.—JOSEPH W. TATUM, *Haddonfield, N. J.*

**The White Pelican (*Pelecanus erythrorhynchos*) on the South Carolina Coast.**—On the afternoon of June 13, 1934 the writer saw, off the beach of Folly Island about ten miles from Charleston, S. C., a flock of ten White Pelicans. The birds were about a half mile from the beach, scaling low over the water, alternately flapping and sailing into the

<sup>1</sup> 1922, Murphy, Auk XXXIX, 58.

<sup>2</sup> 1933, Norton, Rhodora 35, 291.

<sup>3</sup> 1904, Dutcher, in Norton *Mss. Auk*, XXI, 159.

teeth of a fresh westerly breeze. All details of their appearance were easily studied with an 8 x glass and they were in sight for several minutes. The white plumage and black areas on the wing tips made a strong contrast against the background of ocean, which the wings almost seemed to touch as they flapped.

This species is now excessively rare on the Atlantic coast, and the observance constitutes the first record for South Carolina since a specimen was secured in the Santee Swamp on October 26, 1910. In his 'Birds of South Carolina' page 12, the late Mr. A. T. Wayne gives an instance of four White Pelicans having been seen by a boatman of his acquaintance near Bull's Island, in March 1902, but he says that "these may have been albinos of the Brown Pelican." The writer is inclined to believe that they were really the white species, as four albinos together would be even more improbable. It is possible that the recent unprecedented drought conditions in the West may have set some of the birds to wandering and which might account for such a flock having been seen so far out of their normal range at this season.—ALEXANDER SPRUNT, JR., *Route No. 1, Charleston, S. C.*

**The Double-crested Cormorant Nesting in Southeastern Iowa.**—On June 24, 1934, a field trip was made, with W. L. Harvey, Deputy Game Warden, to Green Bay, midway between Burlington and Ft. Madison, Lee County, Iowa. This area of approximately seven thousand acres, which is isolated from the Mississippi and Skunk Rivers only by retaining dikes, has within the last two years become flooded through the discontinuing of the pumping station.

A flock of seventy-six Double-crested Cormorants (*Phalacrocorax auritus auritus*) were still present, the straggling remnant of ten thousand or more that had fed there early in the spring.

Twelve nests of this species were found in a partially submerged grove of cottonwood and willow trees, located in nearly the middle of the bay. The eight to ten feet of water had killed the cottonwoods, but the willows continued to grow. Eight of the twelve nests were located in the cottonwoods; the remainder being in the willows. The height of the nests above the water varied from twelve to twenty-two feet.

One nest, eighteen feet above the water, was in a cottonwood, fine inches in diameter. It contained two eggs and two nestlings. This nest and its contents were collected. One of the young, about three days old, was preserved in the writer's collection. The other nestling, and one which hatched from one of the eggs that evening, together with a one week-old nestling taken from another nest, were preserved in the D. J. Bullock collection, Des Moines.

A live willow contained three nests. One, twelve feet above the water, contained three eggs and one nestling (the latter collected). A nest eighteen feet above the water contained three eggs. One, twenty feet above the water was not examined. Another nest examined by Mr. Harvey on May

28 contained three eggs. The nests were constructed of dead cottonwood branches from one-eighth to one-half inches in diameter. The lining consisted of strips from the inner bark of the cottonwood.

Both Cooke (1884-5) and Keyes and Williams (1889) stated that the Cormorant formerly nested in northern Iowa, but Anderson (1907) was unable to find any recent records. This is an addition to the list of breeding birds of Iowa as recently enumerated by the writer (*Oölogist*, LI, 1934, pp. 50-66).—PHILIP A. DUMONT, *Des Moines, Iowa*.

**A Great Blue Heronry in Massachusetts.**—For many years, the existence and location of a breeding colony of Great Blue Herons (*Ardea h. herodias*) in Massachusetts has been a closely guarded secret. Even the late State Ornithologist, E. H. Forbush, seems to have known nothing about it. His late assistant, J. A. Farley, passed near it several times and remarked the suspicious number of Herons he saw summering in its general region, but apparently never discovered it. We found it on July 12, 1932,—hearing the outcries of the young Herons and getting a local boy to guide us through the pathless forest to the spot. He said it had existed at least since 1920. It was known, we learned, to a few, but very few, ornithologists. This year the secrecy surrounding it has broken down, at least in its vicinity, and it is vaunted as a local attraction and visitors are taken to see it; but even so we prefer not to locate it more definitely than to say it is in Worcester County near the border of Franklin County. The clamor of the young in late June and early July can be heard for miles, and of course the parents are often seen flying towards the heronry with distended throats. (Some of the fish they bring are astonishingly large!) A youngster, fledged but seeming unable yet to fly, was caught on the ground, June 25, 1934, and banded; but attempts to band the young in the nests are highly undesirable. Most or all of those "grounded" before they can fly must fall victim to bob-cats, foxes, etc. We have asked the bird-students of the region to do all they can to protect the colony from mere curiosity-seekers. There are only 18 or 20 nests, and too much publicity may easily make the birds go elsewhere even if no harm befalls them.—AARON C. BAGG, *Holyoke, Mass.* AND S. A. ELIOT, JR., *Northampton, Mass.*

**A Colony of Little Blue Herons in Norfolk County, Virginia.**—The Audubon Association has been interested for some time in locating breeding colonies of Herons in Virginia. Recently a report came to Dr. T. G. Pearson of a large colony established only this year at Fentress, Norfolk County, Virginia, seventeen miles south of Norfolk. At his request I made an investigation of this colony on June 22, 1934, taking with me Major R. P. Carroll of Lexington. While we found that the reports as to variety of species and number of birds had been greatly exaggerated, the colony was large enough to be of some interest. The only species present was the Little Blue Heron (*Florida caerulea caerulea*). We made a careful survey and found about four hundred nesting pairs. The colony

covered an acre in a large growth of small loblolly pines. It was on high ground, near a highway, several miles from any water. The Dismal Swamp lies about ten miles south, and the Chesapeake-Albemarle Canal four miles north. A few nests still contained eggs, and some had small young, but in most cases the young birds were in the trees, although none were yet on the wing. From the top of one pine I counted 250 young birds in sight within thirty yards. In the circling flock of adults only four or five were in white plumage. This is the only colony in the state of which I have definite knowledge at present. The first wandering Little Blue Herons that I have seen up-state during this season were two white birds in Nelson County, within sight of the mountains, on July 3.—J. J. MURRAY, Lexington, Virginia.

**Little Blue Heron (*Florida caerulea caerulea*) in Wisconsin.**—On July 26 and 27 I observed eighteen Little Blue Herons in the immature or white phase in the swamp at Golden Lake, Waukesha County, Wisconsin, about thirty miles west of Milwaukee. Their light green legs and small size eliminated any possibility of confusion with either the Snowy or American Egrets. They were very tame and easily approached.—C. M. FLORY, 2220 Wauwatosa Ave., Wauwatosa, Wis.

**Recent Duck Records in Southwestern New England.**—*Chauli-*  
*lasmus streperus*. GADWALL.—A female was surprised in a small, shallow marsh in Hadley on the extraordinary date, May 13, 1934, and identified by Ludlow Griscom. It was with a male Baldpate. The following evening both birds were again there and gave me close views. No white was visible in the Gadwall's wing, only a central gray patch; but she had no vinaceous color, and her neck was thinner than the Baldpate's.

*Mareca americana*. BALDPATE.—The just-mentioned, late (May 13-14) drake was the only Baldpate seen this spring in western Massachusetts, though around Hartford, Conn., several were observed at the usual season. Similarly in the fall of 1933, only one was observed at Northampton, a male which spent the period October 10-22.

*Mareca penelope*. EUROPEAN WIDGEON.—Thrice, now, I have seen ducks in Arcadia sanctuary, Northampton, which I felt sure were of this species, but until I had seen others on Long Island last winter I did not care to record them, as they were not in the plumage of the adult male. However, the warmly ruddy head of the female and the small amount of white in her wing are unmistakable field-marks for one who knows well the more familiar ducks. The dates of my observations are Nov. 4, 1931 (when I was within 30 feet of the bird as she swam toward me out of the bushes), Oct. 19, 1933 (when I watched one through a 25 x telescope), and May 22, 1934,—a date only credible in the light of the Baldpate and Gadwall records just given. This bird flew past me, very low and near, in perfect light, and exactly corresponded to the other two in the long, reddish neck, slender wing-white, and peculiarly buoyant, tipsy, easy flight.

Cannot all three of the unprecedented May records be correlated with the mid-western drought and the great dust-storm that blew east early in May 1934?

*Querquedula discors*. BLUE-WINGED TEAL.—It is tempting to attribute also to the drought and dust-storm the unusual numbers of this Teal, which ordinarily is very rare in spring here. A ♂ was in Northampton April 10–11, and a pair May 13, 1934; and at the little marsh in Hadley above-mentioned, 2 ♂♂ and 3 ♀♀ were regularly noted from May 11 on, save that one mated pair moved elsewhere after a week or so, and the other three birds were last noted May 21, when the marsh was threatening to dry up. At South Windsor, Conn., two pairs nested, quite early in the spring, as their broods of downy young were seen May 26, and often thereafter, by C. W. Vibert and others.

*Oidemia americana*. AMERICAN SCOTER.—The interesting note on this species in 'The Auk' for April, 1934 (pp. 228–9), inquires whether it has a normal migration-route over western New England. Our investigations indicate that it has, but not so far west as Norfolk, Conn. The late R. O. Morris of Springfield, Mass., kept closely in touch with fall Duck-flights for many years, yet only once heard of this species: a bird killed near Northampton in 1905. But farther up the Connecticut valley, between Vermont and New Hampshire, there are several records, and after passing down this pathway from the St. Lawrence between two mountain-ranges, the Scoters normally swing east, as indicated by G. H. Thayer's "rather regular fall migrant" at Dublin pond, N. H.; C. E. Ingalls' "not rare in fall on the large ponds" near Templeton, Mass.; and the occurrence of flocks at Lake Wickaboag in West Brookfield, Mass. which have been seen in nearly every autumn since 1925 by observers living there. Only abnormally does the species appear farther west. A flock of 61, all males, at Barrytown, N. Y., Oct. 8, 1927, is graphically described in Griscom's recent "Birds of Dutchess County," which otherwise records only three female stragglers. We noted similar stragglers, alone or with Scaups, in 1932 at Ludlow, Longmeadow, and Northampton. But in 1933 a real flight occurred. On October 6, about as the sun rose after a rainy night, a flock of 130 or so flew down the river between Northampton and Hadley, swerving to avoid the mist-crowned Holyoke range; and towards evening about 30 were observed, huddling timidly, in the middle of Ashley pond, southwest of Holyoke. On Nov. 5, about 15, none of them adult males, were again on Ashley pond. This, with the occurrence of seven males on Onota Lake, west of Pittsfield, Oct. 18, and the calamity that overtook a larger flock at Norfolk, Conn., Oct. 22, suggests that (1) the species was in 1933 diverted to a more westerly route than normally, by some cause not merely meteorological; (2) it does normally migrate alone without mixture with other species; and (3) the adult males tend to keep together and avoid the company of the females and young.

To save space, other notes may be combined as follows. The White-

winged Scoter (*Melanitta deglandi*) and Hooded Merganser (*Lophodytes cucullatus*), both rare in autumn, were observed at Northampton in 1933 on October 28 and 27 respectively. The Red-breasted Merganser (*Mergus serrator*) was unprecedentedly common in western Massachusetts in the spring of 1934, between March 18 and May 12. The Wood Duck (*Aix sponsa*) arrived very early (March 18), despite the harsh winter, and the Green-winged Teal (*Nettion carolinense*) lingered very late: a pair were at Northampton on April 27, and one was seen at South Windsor, Conn., on May 9 by C. W. Vibert. Mr. Vibert also recorded a Lesser Scaup (*Nyroca affinis*) there on May 7. A ♂ Old-Squaw (*Clangula hyemalis*) was noted at Holyoke, Nov. 8, 1933, and a ♀ Bufflehead (*Charitonetta albeola*) was there March 18-19, 1934.—SAMUEL A. ELIOT, JR., Smith College, Northampton, Mass.

**Lead Poisoning in *Branta canadensis canadensis*.**—On May 23, 1934, a male Canada Goose, which had been captured the day before at the St. Clair Flats, St. Clair County, Michigan by State Game Warden O. B. McClellan was examined by the writer at the Museum of Zoology of the University of Michigan.

The bird was in a weakened condition, with wings hanging but not trailing on the ground, when it was forced to walk which it did in an unsteady manner. It was evidently unable to fly as it made no attempts to do so when placed on the floor in the laboratory. It did struggle when handled and a light green fluid came from the throat as a result of its struggles. The voice was very weak, the eyes bright and steady and the feces light green and watery, with evidence of a very small amount of organic matter present. The bird was emaciated and weighed 3023.25 grams. A small number of *Philopterids* were present, but not enough to seriously affect the bird.

Dr. E. C. O'Roke made a blood examination for *Leucocylozoon anseris* but found no evidence of the presence of this parasite. Upon autopsy the flesh was found to be pale in color. The testes measured, left 7 mm. x 4 mm. and the right 5.5 mm. x 4 mm. These sizes are small, but it was unknown whether or not the bird was of breeding age.

The proventriculus was greatly distended and packed with grasses, scirpus, and common horsetail. A group of seven lead shots were found in the posterior part, in contact with the tissue, which at this point was dark gray or black in color and sloughed easily. The remainder of the inside of the proventriculus appeared to be in a normal condition.

The gizzard contained nine lead shot and a small amount of fine gravel. Large areas of the lining of the gizzard were carotinized, with areas between in which the mucus membrane was soft and sloughed easily. The shots showed evidences of having been ground, while those in the proventriculus were comparatively smooth. An examination of other organs revealed no parasites and showed no evidence of anything which might have contributed to the sickness of the bird.

The contents of the proventriculus (food, grit, etc.) weighed 359 grams; of the gizzard, 10-9 grams. There were sixteen shot of various sizes, seven in the proventriculus (6 grams) and nine in the gizzard (6.5 grams).

The size of some of the shots may be inaccurate because of grinding.

Dr. Miles D. Pirnie of the W. K. Kellogg Bird Sanctuary, Augusta, Michigan, reports an examination of five Canada Geese found dead by Game Warden Summer April 13, 1933 on Indian Lake, Barry County, Michigan. The number of shots found in these birds is an interesting contrast to the number found in the one above described. They were as follows: two females weighing 2275 and 2750 grams contained 5 and 2 shots; three males weighing 2825, 4125 and 3560 grams, contained 3, 4 and 7 pellets. Each bird was carefully examined for other contributing causes of death, but none was found.

Two other Canada Geese, which were evidently victims of lead poisoning have been found and examined by Dr. Pirnie. A male weighing 3000 grams was found dead on the Sanctuary grounds April 4, 1934. The gizzard contained four lead shots. Another bird, weighing 2575 grams and containing 20 lead shot was found April 29, 1934 on Sherman Lake, Kalamazoo County, Michigan. This one had evidently been dead some time when found.

In making examinations of sick or dead birds the fact that the bird is emaciated and has a packed gizzard does not necessarily mean that it is a victim of lead poisoning. Birds have been found with what are known as "typical lead poisoning symptoms" and no lead had been found either in the gizzard or the tissue. The only sure method of determining whether or not a bird has lead poisoning is by the actual presence of lead shot or presence of lead in the intestines or tissue. And then we can not be sure that lead poisoning was the cause of death, as there are Mallard Ducks at Michigan State College, apparently healthy, which were fed lead shot experimentally two years ago by Drs. Stafseth and Thompson.—WILLIAM JOHNSTON HOWARD, *W. K. Kellogg Bird Sanctuary, Augusta, Mich.*

**Voice of the Turkey Vulture (*Cathartes aura septentrionalis*).—** Aside from a low hiss, the voice of the Turkey Vulture or Buzzard is so rarely heard that it has been considered almost a voiceless creature, and very few instances of its emitting sounds have been recorded.

J. R. Pemberton in 'The Condor,' Vol. 27, Jan. 1925, p. 38, under the title "Voice of the Turkey Vulture" has noted the voice of the species as he heard it in California. He says, "It distinctly gave voice to a low pitched nasal whine, slowly repeated at intervals of about three seconds and greatly resembled the whine of a small puppy." He states that the beak was not opened.

On July 15, 1934, I made a trip to the top of Laird's Knob in the Massanutten, near Harrisonburg, Va., altitude about 3,300 feet. At the top of the peak I came upon two Buzzards. Before flying one emitted several peculiar notes, beginning with a short, staccato *tschuck, tschuck*, repeated

several times and followed by a whining note repeated two or three times. The birds finally left the peak and circled over my head at no great distance. On several occasions while wheeling over my head, one delivered the low whine, a note with a slight rising inflection.

My own observations thus agree very closely with Pemberton's as to the whine.—H. A. ALLARD, Washington, D. C.

**Notes on the Kites of South Carolina.**—The writer was interested to read, in the July number of 'The Auk,' of Mr. J. Willcox Brown's observation of a Swallow-tailed Kite (*Elanoides forficatus forficatus*) in South Carolina.

I have seen this bird in South Carolina on three occasions, all in Berkeley County, as follows:

1929. Date lost, one bird was circling high in the air over Witherbee Station, on the S. A. L. Railroad.

1932. June 17, one bird, in company with three Mississippi Kites (*Ictinia mississippiensis*), soaring over our dwelling, Middleburg Plantation house.

1933. June 10. One bird, circling low over the house.

The Mississippi Kite is still fairly common in suitable localities in coastal South Carolina. During the summer of 1924, birds were seen within eight miles of Mount Pleasant; in the last few years, it was been constantly observed during the months of May, June and July. As many as five or six may often be seen together. Both of the Kites still undoubtedly breed in this state.

Only once have I been near enough to a Mississippi Kite to hear its note, which quite closely resembles the song of the Wood Pewee (*Myiochanes virens*), but is weaker. The Kites feed entirely in the air, usually high up, and rarely come near the ground; they are often seen over the old rice fields, as insect life is abundant there.—E. VON S. DINGLE, Middleburg Plantation, Huger, S. C.

**The Western Pigeon Hawk in Yucatan and Kansas.**—Recently, while examining a small series of Pigeon Hawks in the collection of the Museum of Birds and Mammals, I noticed two specimens labeled *Falco columbarius columbarius*, which belong to the race *Falco columbarius bendirei*. These two birds, which are undated and unsexed, were collected by George F. Gaumer on Cozumel Island, Yucatan.

According to a biographical sketch of Gaumer in the files of the Alumni Association of the University of Kansas, he spent four months collecting on Cozumel Island in the year 1886. There seems to be little doubt, therefore, that the locality as written on the original labels is correct. Unless there are other specimens in the collections that Gaumer sent to England, this is the only record of *Falco columbarius bendirei* from Cozumel Island.

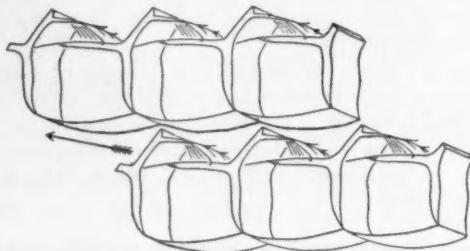
In the same collection of Pigeon Hawks, there is another specimen of

*Falco columbarius bendirei* taken by Dr. Louis Watson at Ellis, Ellis County, Kansas, in October or November, 1875. It was sent with several others to Dr. Snow, who classified all of them as *F. c. richardsoni*. This is the only reported occurrence of the Western Pigeon Hawk in Kansas, although the bird probably occurs as an occasional migrant and winter resident in the western part of the state.

I am greatly indebted to Mr. James L. Peters, of the Museum of Comparative Zoology, who has checked the identification of these specimens.—W. S. LONG, *Museum of Birds and Mammals, Lawrence, Kansas.*

**Feather Structure of the Ruffed Grouse.**—The origin of the odd drumming note delivered by the Ruffed Grouse (*Bonasa umbellus umbellus*) has long been a subject of conjecture among naturalists. Several well known theories have been advanced from time to time to account for this bird's somewhat unique call but a study of the feather structure seems to have been overlooked as a means of throwing further light on this subject. It also appears that the sometimes startling whir which the Grouse is capable of when arising, has not been considered in connection with its drumming note but a close study of the flight feathers would indicate that both may have one and the same source.

When the subject is considered from this point of view it seems that in producing the required vibrations of its flight feathers the bird must be



capable of directing them in the desired direction and in drumming this requires such concentration as to make the Grouse oblivious of even his immediate surroundings. To whir upon arising the feathers are probably directed in much the same manner but the stroke of the wings is, of course, considerably retarded due to the resistance offered by the air and the shuffling which the feathers undergo is lessened.

This does not imply that the individual quills are moved independently but rather, perhaps, that the bird holds them more rigidly than is its usual wont so that in passing the surfaces impinge with sufficient force to cause vibration of the ventral ridge of the ramus.

An examination of the primaries would indicate a depression of the shaft resulting in what might be termed a flattened feather, or in other

words, whereas in most quills the shaft forms a ventral prominence in this instance the shaft is even with the vanes resulting in a comparatively smooth structure.

This modified condition is essential, of course, for the surfaces of the feathers could not be contacted closely otherwise. Thus the minute ridges noted at the top of the feather apparently strike glancing blows on the membranous ventral surfaces of the preceding feather much, in fact, after the manner in which cymbals are struck together.

The exact manner in which the bird drums is not readily perceived, in fact it possibly requires much skill and is, no doubt, an accomplishment necessitating precise control.—IRVING L. TOWERS, *Contee Road, Laurel, Md.*

**The Martinique Form of the Ground Dove.**—Probably no more conscientious or painstaking revisionary work has ever been published than Mr. W. E. Clyde Todd's 'Revision of the genus *Chaemepelia*' which appeared in the 'Annals of the Carnegie Museum,' 8, 1913, p. 507–603. This arrangement was adopted practically *in toto* by Ridgway in the seventh part of his 'Birds of North and Middle America,' nor has anyone since differed with Todd's conclusions except in very minor details. A few forms have been described based on material collected after Todd's work was published, but this is only to be expected.

This note deals with a slight rearrangement of some of the Antillean races of *Columbigallina passerina*, found necessary through the receipt of fresh material from a critical locality.

When Todd applied Bonaparte's *Chamaepelia trochila*, which was based on Martinique specimens, to the race occurring in Puerto Rico, Virgin Islands, and the main chain of the Lesser Antilles south to and including St. Lucia, he had but three topotypical birds available, none of them males. Reasoning by analogy from the characters presented by birds from Dominica, the next island north of Martinique, and from St. Lucia the next island south, he concluded that it was safe to apply *trochila* to the "northern form."

When I was on Martinique in 1925 I collected three adult males, three adult females and a juvenal Ground Dove near the village of Sainte Anne in the arid south part of the island. Comparing these birds with a good series from Puerto Rico to Guadeloupe, and from St. Lucia to Grenada, I find that the Martinique birds stand out so distinctly that *trochila* should be restricted to birds from that island. I can see no way in which the Ground Dove population from Puerto Rico to Dominica can be subdivided and would therefore recognize birds from all these islands by the name of *Columbigallina passerina portoricensis* (Lowe), assigning the same characters given by Todd for *trochila* as understood by him.

The Martinique bird is abruptly larger than *portoricensis*; has the rufous area in the wings reduced, the markings on the squamated areas more pronounced; in addition the males are less extensively vinaceous on the wing coverts and the forehead and sides of head are paler vinaceous.

From *C. p. antillarum* the Martinique bird differs in its larger size, more pronounced squamations, darker dorsal surface and slightly greater extent of rufous in the wing; the males lack the lavender-gray wash on the under surface. Specimens from St. Lucia are just about intermediate between those from Martinique and a series of *antillarum*; where to place them is entirely a matter of choice, and I prefer to refer them to *antillarum*.

Since there is practically no difference in size correlated with sex, the following measurements refer to both males and females.

<i>portoricensis</i> ,	41 specimens,	wing	77–82.5 mm.
<i>trochila</i> ,	6	"	" 83–86.5
<i>antillarum</i> ,	35	"	" 77–84 <sup>1</sup>

The three races dealt with will therefore stand as follows:

**COLUMBIGALLINA PASSERINA PORTORICENSIS (Lowe)**

*Chamaepelia portoricensis* Lowe, Ibis, 1908, p. 108. (Guanica, Puerto Rico).

Puerto Rico, east and south to Dominica.

**COLUMBIGALLINA PASSERINA TROCHILA (Bonaparte)**

*Chamaepelia trochila* Bonaparte, Compt. Rend. Acad. Sci. Paris, 40, 1855, p. 21. (Martinique).

Martinique.

**COLUMBIGALLINA PASSERINA ANTILLARUM (Lowe)**

*Chamaepelia antillarum* Lowe, Bull. Brit. Orn. Cl., 21, 1908, p. 109. (Barbados, Grenada, St. Vincent).

Lesser Antilles from St. Lucia to St. Vincent.—JAMES L. PETERS, Museum of Comparative Zoology, Cambridge, Mass.

**Purple Gallinule on Long Island, N. Y.**—A Purple Gallinule (*Ionornis martinica*) was discovered, by a workman spraying a mosquito ditch, at the Jones Beach State Bird Sanctuary, on June 21, 1934. The bird was captured without great difficulty and readily ate freshly caught prawns. When it was released it fluttered and ran into a clump of bayberries and, when subsequently flushed, climbed and flew into the top of a small maple nearby; it exhibited no awkwardness in clambering about the upper branches. This is, I believe, the third record for Long Island.—WILLIAM VOGT, Wantagh, N. Y.

**Purple Gallinule (*Ionornis martinica*) in Cape May County, New Jersey.**—Mr. Otway H. Brown of Cold Spring, Cape May Co., N. J. tells me that on May 28, 1934, he flushed a Purple Gallinule from the edge of a bog not far from his home. It flew from almost under his feet and the wide spread greenish yellow feet were very conspicuous as well as the blue head and body and the red bill. Mr. Brown is well acquainted with the bird as he was with me when we examined the specimen caught at Anglesea a few years ago.

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<sup>1</sup> The largest measurement is that of a bird from St. Lucia; if this measurement is excluded the maximum is 82.5 mm.

There are several other records for the county but this seemed particularly interesting in connection with the other 1934 occurrences, indicating a flight of these birds.—WITMER STONE, *Academy of Natural Sciences, Philadelphia*.

**Purple Gallinule (*Ionornis martinica*) in Pennsylvania.**—On June 15, 1934 while observing a flock of American Egrets in Tinicum Twp., Delaware County, in the area recently flooded by the breaking of the dykes along the Delaware River, I found a Purple Gallinule which had just been run over by an automobile. It was badly mangled but the skin has been preserved and is now in the collection of the Academy of Natural Sciences of Philadelphia.

The bird was a female with inactive ovaries so that it was probably not breeding in the neighborhood and a survey of the Florida Gallinules which were present in the vicinity revealed no other of this species. It was well nourished and its stomach contained a full meal of insects besides a number of pebbles and a bit of vegetable matter.

Warren records four occurrences of the Purple Gallinule in Pennsylvania (Birds of Pennsylvania, 1889) but I know of no recent instances.—C. BROOKE WORTH, 712 Wynnewood Road, Philadelphia, Pa.

**Golden and Black-bellied Plovers in Michigan.**—On May 20, 1934, in company with Bruce E. Young I saw a Golden Plover (*Pluvialis dominicus dominicus*) at Portage Lake, Jackson County, Michigan. It was in a mixed flock of shore birds including Semipalmated Plovers, Red-backed Sandpipers and others. Its very dark coloring contrasting conspicuously with the light colored waders with which it associated—the solid black breast sharply outlined by a white stripe along the side of the neck. Its golden and brownish back, which fairly glistened in the morning sunshine, and its stocky Plover-like characteristics make me positive of this identification, though the late Dr. Walter Barrows doubts that it visits Michigan, according to his book, 'Michigan Bird Life' of 1912.

On May 27, 1925 I saw four Black-bellied Plovers (*Squatarola squatarola*) at Portage Lake, Jackson County, Michigan. It is strange that nine years later—May 27, 1934—I should see them next, although there were eight of them now in a mixed flock of waders including Turnstones, Semipalmated Plovers, and others. This lake in Southern Michigan nearly surrounded by marsh land and with extensive mud flats of sand and marl, lends itself very favorably to all kinds of shore and water birds. Especially this spring, when a dam at the lower end of the lake gave way, flooding the reedy mud flats where Herons, Gallinules and Rails—including the little Yellow Rail, live unmolested because of the miry soil covering much of the area.—EDITH K. FREY, Jackson, Michigan.

**Northern Phalarope in South Carolina.**—On the morning of May 29, 1934, following extremely high tides and a fifty-three mile blow of the preceding night, Mr. Edward M. Moore shot a Northern Phalarope

(*Lobipes lobatus*), in a pond on Bull's Island, Charleston County, S. C. This specimen, which Mr. Moore kindly presented to this museum, is a female in high spring plumage. The largest ova measured 1.70 mm. in diameter, and the majority of ova about one-third this size. Throat and stomach contained about one dozen insect larvae, in length about 15 mm.

This occurrence brings the number of South Carolina records up to six. The first and most unusual, is that of Loomis, who took a specimen one hundred and fifty miles inland, at Chester Court House, Chester County, May 17, 1880. (Bull. Nut. Orn. Club, Vol. V, 252.) Next in time of occurrence are records cited by Bent (Bull. U. S. N. M. No. 142, p. 27) from Frogmore, Beaufort County, September 25, and "Sea Islands," October 25. While the writer is not familiar with the original records, it is believed that they are those of Hoxie, made between 1884 and 1892. Following these, Wayne, thanks to the activity and discriminating taste of his cat, reported a specimen (of which only a wing was salvaged) brought in on June 3, 1903. (Auk, Vol. XXII, 397.) No further records were made until 1933, when Alexander Sprunt, Jr., saw a female at Cape Romain, Charleston County, on May 30 (Auk, Vol. L, 358).

Of the specimens known to have been taken to date, the Loomis specimen has very probably disappeared. The wing recorded by Wayne and the Moore specimen, here recorded, are in the collections of this institution. I am indebted to Mr. Moore for the privilege of recording this specimen.—E. B. CHAMBERLAIN, *The Charleston Museum, Charleston, S. C.*

**Sandpipers on One Leg.**—In a note entitled 'Sandpiper Cripples' in the July 1934 'Auk' Robert P. Allen cites published references to normal birds of this group standing and moving about on one leg, as anyone who has observed them closely knows they do at times. This last June 2 I noted that as I approached a small group of Sanderlings resting on the beach back from the shifting surf-line, they moved away and then took wing, two or three at least at first hopping vigorously on one leg, and one or two of these hopping birds were seen to let down the other leg and run nimbly before flying.

When standing and resting for any length of time it seems to be rather a normal thing than otherwise for a Sandpiper to do so on one leg. A Greater Yellowlegs may stand for a long time on one motionless straight leg, inclined so as to bring the foot under its center of gravity, the other leg raised and concealed by the feathers. One may speculate as to why this is so. By standing first on one then on the other leg they might rest the one not in use,—but do they do this? There may be some advantage in balance, and my colleague, Mr. H. C. Raven of the Museum's Department of Comparative Anatomy, calls my attention to the fact that when a leg is drawn up the weight of its thigh muscles is shifted forward, whereas the weight of head and neck of a resting bird is apt to be shifted backward.

As regards actual cripples, no one familiar with the potential speed and nimbleness of a Sandpiper on two legs should question that a one-legged

bird is handicapped. It is frequently remarkable how well abnormal birds (or humans for that matter) get along despite this or that handicap, but they are primarily handicaps none the less.

Mr. A. L. Rand tells me native cattle herders in Madagascar frequently stand on one leg (sometimes with a staff, however) for considerable periods; the other foot resting on the knee. Their reason for doing this might have a bearing on our problem.—J. T. NICHOLS, *New York, N. Y.*

**Black Skimmer (*Rynchops nigra*) Breeding in New York.**—Black Skimmers have been observed daily this summer in the vicinity of South Oyster Bay, Long Island, and their actions led the writer to believe that they were breeding. A prolonged search, with the assistance of John Harris of Amityville, who kindly made his boat available, failed to disclose breeding evidence. On August 18, while working in Gilgo State Park, I heard a Skimmer barking not far from a place where, Harris had reported, the bird resented his intrusion. With my glasses I watched the Skimmer fly to the Bay, return with a fish, and drop to the sand near three downy young; their primaries were just beginning to emerge from their sheaths. This is, I believe, the first breeding record for New York State.—WILLIAM VOGL, *Jones Beach State Bird Sanctuary, Wantagh, N. Y.*

**Recent Owl Records from Southwestern New England.**—*Tyto alba pratincola*. **BARN OWL.**—The pair that breeds in the Court-house tower at Springfield, Mass. (apparently the species' northeasternmost breeding-station) had eggs in the mild winter of 1932-33 as early as Feb. 8, but a cold spell shortly after seems to have spoiled them. Several young, very tame and silly, appeared in July 1933 and were caught in attics, photographers' studios, and even the middle of streets. One died in captivity; another, banded and released, was killed by an automobile; a third, also banded, has not yet been heard from. Another brood must have been raised in the fall, for on January 4, 1934, an Owl that was still downy spent the day in a tree at the Colony Club. Undaunted, it seems, by the terrible winter of 1933-34, the Court-house pair held their ground: I banded four unfledged young July 14, 1934. On February 14, 1934, and for several days thereafter, a Barn Owl was observed at South Windsor, Conn., hunting in broad daylight.

*Surnia ululu caparoch*. **HAWK OWL.**—On Feb. 11, 1933, one was collected at the eastern end of the Holyoke range, in Granby, Mass., by B. Schurr, who has mounted it for the library museum at Holyoke. On Jan. 26, 1934, one in Podunk swamp, South Windsor, Conn., was studied in good light through a 33 x telescope at a distance of about 1000 feet by Mr. Geo. T. Griswold, an observer of long experience, who took ample notes on the unexpected stranger he was seeing. Only two Connecticut records, 1869 and 1879, are mentioned in the 'Birds of Connecticut' of 1913.

*Scotiaplex n. nebulosa*. **GREAT GRAY OWL.**—On Feb. 4, 1934, shortly southeast of New Haven, Conn., an Owl of this species was flushed into a

bare tree less than 50 feet from the observer (who had a bright sun at his back) and minutely studied by Frederick W. Loetscher, Jr., a Yale student with exceptional knowledge and caution. He particularly noted the yellow eyes, yellowish bill, and huge facial disks, and next day found his notes tallied perfectly with a mounted specimen.

*Asio f. flammeus*. SHORT-EARED OWL.—Once a common transient along the Connecticut river through Massachusetts, this Owl is now a rarity there. On October 31, 1933, I found in Hadley the body of one that had very recently been shot, and on April 14, 1934, two young friends of mine observed in Northampton what can only have been this species. On Feb. 3, 1934, with the sun high and a foot of dazzling snow on the ground, one was watched by Mr. Loetscher, near the Sound southwest of New Haven, hunting by ear. It flapped and hovered close over the snow, cocked its head, and plunged, coming down with wings outspread on the snow and ducking its head deep under. Having caught its prey in its bill, it remained where it was, as if helpless, until too closely approached, when it rose, transferred the mouse from bill to foot, and lit on a post, where it seemed to pluck little pieces from the mouse and then swallow it whole, head first.

The first nine days of February, 1934, were almost solidly sub-zero in western Massachusetts. A Screech Owl perching on an iron bridge was seen to fall from it, numb and helpless. The frozen body of a Great Horned Owl was found on golf-links in Holyoke, uninjured. Quite a number of Saw-whet Owls were picked up, dead or dying, in the late winter or early spring.—SAMUEL A. ELIOT, JR., *Smith College, Northampton, Mass.*

**A New Stygian Owl.**—The stygian Owl, *Asio stygius stygius* (Wagler), has been considered quite uniform throughout its range. Comparison, however, shows certain differences between specimens from southern Brazil and from Mexico and Central America. I therefore describe the latter as a new race.

***Asio stygius robustus*, subsp. nov.**

**Subspecific characters.**—Similar to *Asio s. stygius* (Wagler)<sup>1</sup> but lighter areas above and below whitish or light buff instead of deep buff or ochre; lighter spots on inner webs of primaries light ochraceous to buffy-white or obsolete instead of deep buff or ochre; bars of upper tail coverts buffy white instead of deep buff; ground color of flanks and under tail-coverts whitish washed with buff instead of wholly deep buff; streaks of longer under tail coverts giving out three pairs of lateral bars instead of one or none; size larger, wing of female more than 335 mm.; toes sparsely feathered to middle of terminal joint.

**Type.**—Adult female, U. S. Nat. Mus. No. 27, 113, Mirador, near Vera Cruz, Mexico, collected by C. Sartorius, original No. 6.

<sup>1</sup> *Nyctalops stygius* Wagler, *Isis* (von Oken), 1832, col. 1221. ("Brazil" — Minas Geraes.)

*Measurements of type.*—Wing, 344; tail, 171; culmen from cere, 21.5 mm.  
*Range.*—Vera Cruz, Mexico to Nicaragua, and perhaps farther southward.

*Remarks.*—The type of *Asio s. stygius* (Wagler) came from Minas Geraes, Brazil, according to the label. It was described as having the spots on the inner webs of the primaries whitish-rufescence in color; the posterior under parts with ochre ground color; and the longest under tail-coverts with a black bar near the tip. The specimens I have seen from southern Brazil have these characters. Therefore it is likely that the type came from that region. This also indicates that the lighter whitish buff spots on the inner webs of the primaries, the whitish buff ground color of the posterior under parts, and the streaks with three bars instead of one on the under tail-coverts occur only in Central American specimens, for which they constitute subspecific characters. I have examined two specimens of *Asio s. stygius* and two of *Asio s. robustus*. I have seen no specimens from Colombia or Ecuador and do not know to which form they belong.

The feathering on the toes tends to break down the bare toe distinction on which Wagler separated his genus *Nyctalops*.—LEON KELSO, Washington, D. C.

**The Cuban Nightjar (*Antrostomus c. cubanensis*) in the Isle of Pines.**—When paying a short visit to the Isle of Pines last March I was fortunate to secure a specimen of the Cuban Nightjar (*Antrostomus c. cubanensis*). The bird, an adult male, was in breeding condition and is the first specimen of this species that has been collected on the Isle of Pines. It was found in dense scrub near the Paso Piedras, north of the Cienaga Lanier. In the evening of the same day, March 12, a female was flushed from her eggs in a thicket bordering a clearing. The nest, as is customary with birds of this family, was merely a slight hollow formed by the bird on a matting of dry leaves. The eggs have the ground color dull white, slightly tinged on one egg with pinkish-buff, and are indistinctly spotted with brownish or brownish-buff, with rather heavy underlying markings of dull grayish-lavender. They measure 29.9 x 22 and 29.8 x 21.6 mm. respectively. The lighter colored egg was fresh, the other slightly incubated.

Unfortunately I did not hear the notes of this species but from what the natives told me they resemble a hoarse croaking and are apparently totally unlike those of the northern Whip-poor-will (*A. vociferus*), thus corroborating the statement of Gundlach (*Ornitología Cubana*, p. 102).—JAMES BOND, Academy of Natural Sciences, Philadelphia, Pa.

**Some Notes on the Yellow-bellied Sapsucker in Southwestern New Hampshire.**—Having seen the Sapsucker (*Sphyrapicus v. varius*) in this and nearby towns uncommonly but rather regularly for the past twelve summers, a brood present this summer (1934) is the first authentic

breeding record that I am aware of in Cheshire County west of Mount Monadnock.

Of two birds observed, (a third disappeared about July 25), one is in complete juvenal plumage (August 11), the underparts very dusky and the entire plumage rather indistinct in markings except for the white wing patch and white on throat and sides of head, probably a young female. The other, in clearer juvenal plumage, shows a red forehead, evidently a male. Both camouflage well against the bark of the elm tree on which they feed. Usually silent, on July 28 in late afternoon they were noisy and giving the hawk-like cry, going from tree to tree with rapidly fluttered flight, similar to the flight of the Downy Woodpecker in the mating display. It is habitual for them to cling to the tree silent and immovable, for long periods between feeding activities.

The large elm in question, alive and healthy-looking, is simply peppered up and down the main trunk and to within four feet of the ground with eighth-inch holes from which small red ants emerge, the birds having enlarged the holes and made them funnel-shaped. When feeding, they are quite tame. The afternoon of August 4 they were in the tree feeding until almost dark and stayed there during the night, as, I believe, they had before and have since, clinging underneath an out-thrust limb.

These two Sapsuckers were still present at their feeding tree on August 12, when my observations ceased.—LEWIS O. SHELLEY, *East Westmoreland, N. H.*

**Albinism in the Phoebe (*Sayornis phoebe*).**—My attention was called to a Phoebe's nest on a farm near Broadway, Virginia, containing five nestlings, one of which was light colored. Upon investigation I found one to be partially albino.

The eye color is normal; the wing and tail feathers are cream throughout, not white. The contour feathers on the head, back, rump, breast and belly are gray beneath, but tipped with cream. The bill and feet are also light. In size the bird is like the other four normally colored Phoebes.—D. RALPH HOSTETTER, *Harrisonburg, Virginia*.

**Prairie Horned Lark Breeding at Naruna, Virginia.**—On June 7, 1934, I found a nest of the Prairie Horned Lark (*Otocoris alpestris praticola*) with three eggs under a bunch of weeds in a hay field one mile south of Naruna, Campbell County, Virginia, and about thirty miles south of Lynchburg. This point is east of the Blue Ridge and farther south than any previously reported nest of this species.—BERTHA DANIEL, *Naruna, Virginia*.

**Magpie (*Pica pica hudsonia*) in South Carolina.**—In the early part of May of the present year Mr. George W. Seabrook, Jr., saw on a large sandflat in front of his house on Edisto Island on the South Carolina coast a bird of a kind that he had never seen before. His father, Mr. G. W. Seabrook, whose house stands within a few hundred yards, saw the same

bird the following day and was instantly struck by its strange appearance. On this second occasion it was in a lot where cattle were lying and it was engaged in walking about near the cows apparently catching the large flies attending the cattle.

Some weeks later (in July) both these observers gave me independent descriptions of the unfamiliar bird which had thus attracted their attention. It was black or very dark, they said, with a very long tail, and appeared to be somewhat larger than a Jackdaw (Boat-tailed Grackle). But what particularly struck them both was a large white patch on either shoulder so conspicuous that it was immediately noticeable and even at a distance was the most distinctive feature of the bird.

I can recall no previous record of the American Magpie on the South Carolina coast, but there is no doubt in my mind, knowing both these observers as I do, that this bird was a Magpie. This conclusion is forced by a process of elimination; there is no other bird that fits the description of this visitor.

It may be of interest to note that within half a mile of the spot where this Magpie was seen I saw and watched for a considerable time a Scissor-tailed Flycatcher on November 6, 1928.—HERBERT RAVENEL SASS,  
*Charleston, S. C.*

[There is a recent record of a Magpie in the vicinity of Palm Beach, Florida, too wild to be recaptured, but definitely determined to be an escape from an aviary. Another was shot recently near Atlantic City, N. J., doubtless with a similar history.—Ed.]

**Troglodytes aëdon baldwini—An Addition to the Breeding Birds of Virginia.**—On June 5, 1934, a few days after I had received a paper by Dr. H. C. Oberholser describing the new Ohio form of the House Wren, my little daughter brought me a House Wren which she had found dead in our yard at Lexington, Virginia. It was a male with enlarged sex organs, and as other Wrens in the yard had eggs at the time, was apparently a breeding bird. I sent the skin to Dr. Oberholser, and he identified it as *baldwini*. It seems to be the first breeding specimen of this race to be taken in Virginia.—J. J. MURRAY, *Lexington, Virginia*.

**Gray-cheeked Thrush (*Hylocichla minor aliciae*) in West Virginia—A Correction.**—In 'The Auk' for April, 1934, page 241, I recorded the Gray-cheeked Thrush from West Virginia. In the note I stated that the only previous record for the state was one made by Mr. I. H. Johnson. In so stating, I inadvertently overlooked records for the species in the state made by Dr. George Miksch Sutton, and published in 'The Oölogist,' 1920, p. 80, and in 'The Cardinal,' January, 1933, p. 116.

I wish hereby to make correction of this oversight, and to apologize to Dr. Sutton.—MAURICE BROOKS, *French Creek, W. Va.*

**A Report on the Starling in Iowa.**—Since the first appearance of the Starling (*Sturnus vulgaris vulgaris*) in Decatur County, Iowa, in December,

1923 (Auk, XLV, pp. 101-102), and its subsequent invasion after 1928, there were on July 15, 1934, reports of occurrence from 89 of the 99 counties in the state. Of the ten counties from which there are as yet no reports, one, Clarke County, is in south-central Iowa; one, Greene County, is in the west-central part; four, Cass, Mills, Pottawattamie, and Harrison counties are in southwestern Iowa; and four, Buena Vista, O'Brien, Osceola, and Lyon counties are in the extreme northwest.—PHILIP A. DUMONT, *Des Moines, Iowa.*

**Lawrence's Warbler Taken Near Toledo, Ohio.**—On May 30, 1934, a male Lawrence's Warbler (*Vermivora lawrencei*) was taken in the "Oak Openings" about two miles northwest of the village of Whitehouse, Ohio, in Swanton Township, Lucas County. This bird which was in breeding condition was accompanied by a female Golden-wing and a male Blue-winged Warbler. The only songs heard were typical of the Blue-wing; but whether or not this was the Lawrence's song is unknown.

Inasmuch as the Golden-winged Warbler (*V. chrysoptera*) is a fairly common summer resident in the Oak Openings and Blue-wings (*V. pinus*) are confined to two or three pairs nesting in the same vicinity each year, this hybrid was not entirely unexpected. Brewster's Warblers (*V. leucobronchialis*) are found regularly in small numbers each year. In fact, one was seen less than one hour before the Lawrence's was collected.

As far as we have been able to learn this rare hybrid has never before been recorded in the state of Ohio. The prepared skin was presented to the Ohio State Museum at Columbus.—LOUIS W. AND BERNARD R. CAMPBELL, *Toledo, Ohio.*

**The Nesting of the Canada Warbler in Connecticut.**—On June 28, 1934, at North Cornwall in the northwestern part of Connecticut, in a little clearing in the woods where an old charcoal pit used to stand, I examined a dense clump of Christmas fern. In its very center, beautifully hidden in the base of the fern was a nest made of leaves and lined with hairlike roots, containing four cream-colored eggs, blotched and speckled with chestnut brown, the blotches making a wreath around the larger end.

The bird flew off and as I caught a glimpse of its gray back I thought it was a Nashville Warbler. Later, on going to the nest with my bird-glasses, I saw the clear yellow throat, ringed eyes and necklaced breast of the Canada Warbler (*Wilsonia canadensis*).

In the 'Birds of Connecticut,' Sage gives only one instance of the Canada Warbler nesting in that state.

The Christmas fern seems to be a favorite nesting place, for in 1931 on the 5th of July in North Cornwall, Conn. I found in a clump of the same a Black-throated Blue Warbler's nest, with the tell-tale pieces of decayed wood hanging to it, containing three eggs. Always before I had found the nest in rhododendron bushes and more rarely in other bushes but never before in fern. That one was not four inches from the ground.—SAMUEL SCOVILLE, JR., *Haverford, Pa.*

**Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*) in Northern Ohio.**—While driving along the Bay bridge swamps about five miles west of Sandusky on the east side of Sandusky Bay, on May 11, 1934, my attention was called to a strange bird perched on a reed in a swampy meadow. On second glance, with 8 x binoculars, the bird proved to be a Yellow-headed Blackbird. I had the opportunity of observing its white wing patches as it flew across the road in front of me and lit in a tree with Red-winged Blackbirds (*Agelaius phoeniceus*) about twenty feet from where I stood. Then the bird pointed its bill straight up and with apparent physical effort, produced its peculiar rasping note.

The other records of this bird's occurrence in this state are as follows:—

One in collection of F. Frey of Sandusky; six seen passing over Oberlin October 9, 1896 and one reported from McConnellsburg (Jones, Birds of Ohio, 1903). A pair south of Groveport, summer of 1873 (J. M. Wheaton, Birds of Ohio, 1882). One in flock of Red-winged Blackbirds, February 26, 1925 (E. S. Thomas, Wilson Bulletin, 1926, p. 118).—EMORY SAWYER,  
*18186 Clifton Road, Lakewood, Ohio.*

**Color of the Iris of the Purple Grackle.**—The young Purple Grackle (*Quiscalus quiscula quiscula*) has the iris brown, the adult, pale lemon color or almost white. The adolescent bird shows regular gradations from dark to light, depending upon the age of the bird. The sexes are alike in their irid coloration. Emotion or other factors besides age have nothing whatever to do with the color of the iris. An adult bird in the sunlight will appear to have a whiter eye than one in a shadow because bright lights contract the black pupil and thereby the iris becomes more broad and noticeable. The same thing occurs when the bird accommodates its vision, by decreasing the size of the pupil to look at near objects. The brown coloration of the young iris is due to a deposit of brown pigment in front of the lemon-white ground color of the iris, having the same arrangement as the brown coloration of the human eye. In the Grackle this pigment is in exceedingly fine dots, visible only with a microscope. It is not entirely evenly distributed, there being less abundance in the middle concentric third of the iris. As the bird becomes older, the pigment in this area is absorbed, leaving the middle third of the iris pale lemon color and the pupillary and peripheral thirds still dark brown. Two parallel concentric reddish brown lines become visible in the center of this whitish area (shown in Grackles banded A 361365, A 361367 and A 361369) showing the pigment granules being collected within the lymphatic channels, to be carried away to the nasal area of the ciliary body. The brown pigment becomes more and more absorbed, the outer and inner brown bands of the iris become smaller as the bird grows older; in later stages only large masses or dots of pigment remain, the final disappearance being in the nasal areas of the iris. The bird when almost of full growth will show a narrow band of brown lastly at the extreme edge of the iris at the pupil, which appears quite thin. The fully developed Grackle has a completely pale

lemon colored or whitish iris extending from the then thick edge at the pupil entirely to the black sclera under the edge of the lids and orbit. This investigation of numerous Purple Grackles examined under a microscope definitely explains numerous contentions which have been debated at some length in 'The Auk.' All trapped birds with white irides were fully grown and with complete adult plumage. One male Grackle, A 361356, with coarse brown dots on the white iris was full size but had immature plumage—lesser wing coverts purple, median brown and the greater with tips purple iridescent. Measurements show the smaller birds to have more pigment and the larger birds a greater degree of whiteness. In banding at my residence there have been three per cent trap returns of Grackles banded as adults but no returns of birds banded when having a brown iris.—HAROLD B. WOOD, M.D., Harrisburg, Pa.

**The Summer Tanager Nesting Near Washington, D. C.**—During the course of our work on the early stages of the Gold-banded Skipper (*Rhabdoites celus*) we visited once a week from May to the middle of July the woods just north of the unpaved section of the Conduit road about half a mile beyond the point where the paved road turns abruptly north up the hill to reach Great Falls (Md.) by a circuitous route.

In this general region we noted three pairs of Summer Tanagers (*Piranga rubra rubra*) constantly present and undoubtedly breeding.

The birds were not at all shy, and kept down in the lower branches of the trees in contrast to the Scarlet Tanager (*Piranga erythromelas*) which, though more numerous and constantly heard singing, was seldom seen.

Another interesting bird nesting in this region in fair numbers is the Kentucky Warbler (*Oporornis formosus*).—AUSTIN H. AND LEILA F. CLARK, U. S. National Museum.

**Eastern Evening Grosbeak (*Hesperiphona v. vespertina*) at Williamstown, Mass.**—The Evening Grosbeak was recorded for the first time in Williamstown, Mass., on March 19, 1916. Since then it has been a very occasional winter visitor till this year. During the extreme cold spell in the last week of December, 1933, a few appeared and were attracted to a feeding station at the home of John Treadway. The flock soon grew in numbers till forty were counted at one time. They came every day to feed on sunflower seeds and raw peanuts. By early February some also appeared at other feeding stations being seen chiefly in the early mornings. They continued to make daily visits in large numbers till the end of April, when the size of the flocks gradually diminished and they made their final visit May 24. As spring weather came on they uttered their call-notes with louder voice, were rather pugnacious among themselves and showed some courtship actions. They also made soft notes and trills that seemed like attempts at song. The yellow of the males became brighter and they were less conspicuous in leafy trees. In 'Birds of Massachusetts' Forbush gave May 20 as the last date of their appearance in this

state. Other authorities also class the Evening Grosbeak as an irregular winter or early spring visitor, so that this late record and their winter's residence seem worthy of note.—WM. J. CARTWRIGHT, *Williamstown, Mass.*

**Pinicola enucleator eschatosus in Michigan and Ohio.**—In his recent revision of the Pine Grosbeaks of eastern North America (Proc. New England Zool. Club, 14, pp. 5-12, Feb. 12, 1934) Ludlow Griscom has greatly extended the range of *Pinicola enucleator eschatosus* Oberholser. But his statement that "the larger, interior bird [*leucura*] is the only form in the interior of the continent in winter, from western Ontario west to Alberta, and from western Pennsylvania to Nebraska" is apparently incorrect. A couple of years ago Mr. W. E. Clyde Todd called to my attention the fact that *eschatosus* is a valid form with a larger range than that indicated by its describer (Proc. Biol. Soc. Wash., 27, 1914, p. 51) and, not knowing of Mr. Griscom's undertaking, I made a rather extended study of the species in Michigan and Ohio and was surprised to find *eschatosus* the more common winter visitant to this region.

In at least the southern part of Michigan and in Ohio Pine Grosbeaks are rare, but I have had for study forty-six specimens from this area in the collection of the University of Michigan Museum of Zoology. In addition I am indebted to Mr. Charles F. Walker, of the Ohio State Museum at Columbus, for the use of six specimens in that collection, and to Mr. A. D. Tinker, Dr. Max M. Peet, Dr. Miles D. Pirnie, Prof. J. W. Stack of Michigan State College, and Mr. Colin C. Sanborn of the Field Museum of Natural History for the use of additional material in their respective collections.

I have examined the following skins of Pine Grosbeaks from Ohio and find that they all belong to the subspecies *eschatosus*:

- 1 ♀ Fulton Co., Port Clinton. March 19, 1904. Dr. A. Hitchcock.
- 1 ♀ Fulton Co., Royalton Township. Nov. 16, 1933. Milton B. Trautman.
- 2 ♂, 1 ♀ Lucas Co., Swanton Township. Nov. 27, 1933. Bernard R. Campbell.

In order to determine the status of these subspecies in Michigan I have examined specimens from the following collections: University of Michigan (46), Max M. Peet (4), A. D. Tinker (3), Michigan State College (2), Miles D. Pirnie (1), Ohio State (1), Field Museum (1). Of these fifty-eight specimens, thirty-nine are referable to *eschatosus*, fifteen to *leucura*, two are intermediate, and two are immature. On the basis of these specimens I find no geographical segregation of the two subspecies in Michigan in winter. We have fair evidence that the Pine Grosbeak breeds on Isle Royale (Peet—Rep. Mich. Geol. Surv. for 1908, p. 364) and in Ontonagon County (Koelz—Wilson Bull., 35, 1923, p. 58). Specimens taken at both of these points in mid-August are in the University Museum, but both are immature females, making subspecific determination difficult. Also both birds are full-winged and could conceivably have flown some distance.

The winter of 1933-34 brought to Michigan and northern Ohio one of the largest recorded flights of this Grosbeak, and we were thus enabled to examine many in the flesh. An interesting new fact brought out is the big difference in weight which characterizes the two forms. Five males of *leucura* weighed 70 to 83 grams while nine males of *eschatosus* weighed only 52 to 61 grams. Three females of *leucura* weighed 70 to 81 grams compared with seven females of *eschatosus* which weighed 54 to 61.2 grams. The number of specimens at hand is too small to be conclusive but they indicate no difference in weight between red-plumaged and gray-plumaged males nor indeed even between males and females of the same subspecies.—  
JOSSELYN VAN TYNE, University of Michigan Museum of Zoology.

**Canadian Pine Grosbeak in West Virginia.**—In view of the rather uncertain status of the Canadian Pine Grosbeak (*Pinicola enucleator leucura*) in West Virginia, it may be worthwhile to record its occurrence in Upshur County, West Virginia, during the winter and spring of 1934.

On February 24, 1934, Miss Grace Arnold of Buckhannon, W. Va. told me of a large purplish bird which had been found on her porch, and which had been placed in a cage. She also informed me that others of the same kind had been seen near her home. I immediately visited the home, and found in the locality five Pine Grosbeaks feeding in apple and maple trees nearby. Only one was in adult male plumage. The caged individual had completely revived, and was subsequently released. The birds remained in the vicinity for about three weeks, and were seen by a number of observers.

Eight individuals of this species were seen by the writer in a grown-up orchard near French Creek, W. Va. on the evening of February 28. They were feeding on mummy apples, and were quite tame. On March 10, fifteen individuals appeared near French Creek at the home of Ralph Young, an employee of the State Game Commission. They spent some time in the locality, and were observed several times. The last observation of the species was made on April 2, two individuals being seen near the home of Arthur Griffith, of French Creek.

So far as I can learn, the only previous possible West Virginia records are as follows:

Dr. W. C. Rives, in 'Birds of the Virginias,' page 71, calls attention to the fact that Audubon (Birds of America, page 177) says of the Pine Grosbeak, "Some have been procured near the mouth of the Big Guyandotte on the Ohio."

Prof. C. W. G. Eifrig, in notes on West Virginia birds sent to Rev. Earle A. Brooks, Newton Highlands, Mass., records a flock of about fifty birds, probably this species, seen February 10, 1900, along the Potomac River, on the West Virginia side.

In the Museum of Illinois Wesleyan University, Bloomington, Ill., there is a Pine Grosbeak skin accredited to West Virginia, but without other data.—MAURICE BROOKS, French Creek, W. Va.

**Dickcissel (*Spiza americana*) and Prairie Horned Lark (*Otocoris a. praticola*) again in Lancaster Co., Pa.**—A pair of Dickcissels was seen west of Lititz, Lancaster Co., Pa. by Robert Snyder on July 13, 1934, and I observed them the same day, possibly the same pair that was recorded last year.

The Prairie Horned Larks are breeding, this year, in large numbers in the northern part of the county.—BARTON L. SHARP, 201 N. Broad St., Lititz, Pa.

**Another Abnormality in the Nesting Habits of the Carolina Junco.**—In a former volume of 'The Auk,' the writer noted the nesting of *Junco hyemalis carolinensis* upon the rafters of a garage at Blowing Rock in the North Carolina mountains.

Since that time these rafter nests have been found each year in the same building, and in 1934 in another nearby garage as well.

An unusual feature in the latter case is the fact that a series of "dummy" nests was constructed before the final one in which the eggs were laid. These were five in number, each placed about two feet from the other along the length of the beam. None was completed and they ranged from only a foundation to a partially complete nest. The final structure held three eggs on August 1, 1934, this being either the second or third laying of the season.—ALEXANDER SPRUNT, JR., R. F. D. No. 1, Charleston, S. C.

**Western Field Sparrow Again in Northwestern Montana.**—In 'The Auk' for April, 1932 (p. 231), I recorded a few occurrences of the Western Field Sparrow (*Spizella pusilla arenacea*) in the extreme northwestern corner of Montana, about 400 miles northwest of any locality from which the species had been previously reported. Briefly, these records were as follows: a male bird was seen at my home near Fortine on four days during July, 1923; a pair occurred in the same territory from June 10 to August 3, 1929, possibly nesting; a male reappeared in 1930, remaining from May 16 to June 4; and a male was seen in the same place on May 26 and 27, 1931.

No Western Field Sparrows appeared here in 1932 or 1933. On June 18, 1934, however, a male commenced singing daily from the same hillside that the birds had frequented in the earlier years. A few days later I found that at least two males were singing from this territory; and on June 28 I heard four birds singing at the same time from an area of the hillside not larger than ten acres. I am unable to say how many females were present; once two silent birds thought to be females were observed while four males were singing. None of the birds was seen or heard after July 5.

At only one other place in this general region did I find any Western Field Sparrows. On June 24, two singing males were observed along the Middle Fork of the Stillwater River, in Flathead County, 24 miles southeast of Fortine. I did not visit that locality at any other time during the season.—WINTON WEYDEMAYER, Fortine, Montana.

**Nesting of the Eastern Vesper Sparrow in Southeastern Virginia.**—May 31, while laying out terraces on a farm in the west end of Amelia county near the Prince Edward county line we flushed a Vesper Sparrow (*Pooecetes gramineus gramineus*) from under some stunted dewberry vines. An examination revealed a nest with four eggs. About five hours later I returned and again flushed the bird from the nest to reassure myself that there was no mistake. Both times the bird fluttered away over bare ground with wings and tail expanded, giving a fine view of the color markings, especially the white outer tail feathers. The farmer was planning to plow the field in which the nest was located and I urged him to plow around it in order not to disturb it. On revisiting the farm a week later I found that he had kept the letter of his promise, but had plowed so close to the nest on each side that the birds had deserted it. Nest and eggs were collected, though the latter were so spoiled that it was impossible to remove the contents. Both are typical of the species. The same day a full plumaged male Vesper Sparrow was seen and heard singing on a farm about a mile from the one on which the nest was found. This is the first record, as far as I can learn, of the nesting of the species in Amelia county, and there seem to be few authentic records for southeastern Virginia.—JOHN B. LEWIS, Amelia, Va.

**Notes from Western New York.**—*Phalacrocorax a. auritus*. DOUBLE-CRESTED CORMORANT.—This bird is apparently increasing as a spring migrant. There are at least four records totaling eleven birds for Ontario County since 1931. This Cormorant usually appears about May 10.

*Casmerodius albus egretta*. AMERICAN EGRET.—I saw one at Cuba Lake, Allegany County on August 21, 1933. A dozen or more white Herons, probably this species, were reported along the Allegany river in New York at about the same time.

*Cygnus columbianus*. WHISTLING SWAN.—This Swan now seems to be a regular spring migrant in parts of western New York. I have ten records for 1932–1934. Five driven up from a small creek on April 2, 1933, gave a very low pitched "unk," "unk," as they circled in the fog. The sound was quite unlike the usual cries of a flock in flight.

*Chen hyperborea*. SNOW GOOSE.—I saw and carefully identified a Snow Goose with two Canada Geese on March 28, 1932 as it circled low over a frozen pond near Franklinville, Cattaraugus County. The bird appeared but slightly smaller than the other two, and this, as well as the locality, indicated the subspecies *atlantica*.

*Bartramia longicauda*. UPLAND PLOVER.—A flourishing colony of fifteen or more pairs near Franklinville is perhaps one of the larger in the state.

*Baeolophus bicolor*. TUFTED TITMOUSE.—One observed at Franklinville on July 19, 1932.

*Calcarius l. lapponicus*. LAPLAND LONGSPUR.—On April 29, 1934 a flock of at least one hundred and fifty Longspurs was located near Geneva, Ontario Co. by Mr. G. Van Essytine of that city. Some were still

present on May 6. Two males collected on May first had almost completed the pre-nuptial molt. Perhaps the strain of molting induced them to linger on a good feeding ground until this late date. Dr. Eaton gave April 18 as the latest state record available.—DEAN AMADON, Franklinville, New York.

**Notes from Central Pennsylvania.**—May 15—Forty-eight Common Terns (*Sterna h. hirundo*) and two Black Terns (*Chlidonias n. surinamensis*) in company with eleven Ring-billed Gulls (*Larus delawarensis*) were observed on the Susquehanna River about one mile below Sunbury (Shindle and May).

May 23—Four Red-backed Sandpipers (*Pelidna a. sakhalina*) were observed on Thompson's Pond in the borough of State College. The observer was within thirty feet of the birds and used Zeiss 8 x 40 binoculars. On the same day approximately thirty Semipalmated Plover, six Semipalmated Sandpipers and about forty Least Sandpipers. The last three species mentioned were at the Red Mill and near Potter's Mills, Centre County (Stokes, Melenger, Meyer and May). The Red-backed Sandpipers remained in the locality for three days.

May 26—A Broad-winged Hawk's (*Buteo platypterus*) nest was found near Shingletown Gap in Centre County. The nest contained three eggs. Nesting material—twigs and leaves in the crotch of a white oak about twenty-five feet from the ground. (June 12th—Hawk still sitting on nest, no close examination made.) About two hundred feet from the Hawk's nest a nest of the Northern Pileated Woodpecker (*Ceophloeus p. abieticola*) was found. One of the adults was seen leaving the nest. The next day when visited the female was on the nest about forty-five minutes later she was relieved by the male. (June 12—after watching the nest for about an hour the female was seen entering the cavity where she remained for about forty minutes when she was relieved by the male.)

May 29—One male White-winged Scoter (*Melanitta deglandi*) in company with two Red-breasted Mergansers (*Mergus serrator*) on the Susquehanna river about two miles below Sunbury (Shindle and May).—R. M. MAY, Dept. of Forests and Waters, Harrisburg, Pa.

**Notes from the Madison, Wisconsin, Region.**—*Florida c. caerulea*. **LITTLE BLUE HERON.**—On July 28, 1934, two Little Blue Herons were found at Fish Lake, Dane County. Present also were two American Egrets (*Casmerodius a. egretta*). The following day there were five Little Blue Herons and three Egrets. All of the former were in juvenal plumage. One of them, a male, was collected on July 31. There seem to be only two previous references to their occurrence in the state.

*Falco c. columbarius*. **EASTERN PIGEON HAWK.**—On April 8, five miles north of Prairie du Sac, a male was taken: weight 172.5 grams.

*Limosa haemastica*. **HUDSONIAN GODWIT.**—Three of this species were found in a pond near Verona on May 12. The following morning one was

collected: female; weight 256.5 grams. Although at a distance the breast of this bird appeared decidedly chestnut-colored, in the hand about half of this area was irregularly blotched with gray.

On May 19, two birds were found at Fish Lake and on May 27, a single bird in a marsh near Madison.

There appears to be no other state record within the past thirty years. It is probable that the violent dust storms of the period drove the birds out of their normal migration route through the prairie region west of the Mississippi.—A. W. SCHORGER, 168 North Prospect Avenue, Madison, Wisconsin.

**Notes on Some Rare Birds in Douglas County, Kansas.**—During the last winter and spring, a few records from Douglas County, which seem to be worthy of publication, have been noted.

*Muscivora forficata*. SCISSOR-TAILED FLYCATCHER.—A single male was seen about three miles southwest of Lawrence by C. D. Bunker, C. W. Hibbard and the writer, on May 9, 1934. As far as known, this is the first record for the northeastern part of the state. Two days later, a pair was seen in the same place, but they were left undisturbed in the hope that they will nest here. It may be that the extremely dry weather prevailing in Kansas for the last few years has caused an abnormal northward extension of the range of this species, which is known to be gradually spreading eastward.

*Cyanoccephalus cyanocephalus*. PIÑON JAY.—Mr. John McFarland saw two and collected a female near Baldwin, on January 3, 1934. This specimen is now in the Kansas University collection. Only one previous record is known—October 23, 1875, when three were taken from a flock of five near Lawrence, but their present location is unknown. Two specimens were later taken in Mitchell County, on February 5, 1934, by Evelyn Alrich, and sent to the Kansas University Museum. Piñon Jays were also reported from Wichita on December 4, 1933, by Mrs. O. B. Baldwin, a very competent observer. It is highly probable that this bird is a common but irregular winter visitant in the western part of the state.

*Sturnus vulgaris vulgaris*. STARLING.—Two specimens, now in the museum collection, were taken from a large flock about seven miles southwest of Lawrence on December 25, 1933, by Mr. Ora Scott and the writer. The bird is quite common about Wichita, has been taken at Manhattan, and there are two or three sight records for Lawrence, but these are the first specimens from this locality. There are no nesting records for the state, although the species undoubtedly breeds in the southeastern part.

*Calcarius pictus*. SMITH'S LONGSPUR.—The writer took a male from a flock of about twenty or twenty-five, two miles south of Lawrence, on March 3, 1934. There are a few old records, but the species seems to be rather rare in this part of the state.

The writer wishes to thank Mr. C. D. Bunker, Assistant Curator in Charge of the Museum of Birds and Mammals, for permission to submit

these records.—W. S. LONG, *Museum of Birds and Mammals, Lawrence, Kansas.*

**Samuel Champlain's Notes on West Indian Birds.**—In the 'Narrative of a Voyage to the West Indies and Mexico in the years 1599–1602' by Samuel Champlain, translated by Alice Wilmere and published by the Hakluyt Society in 1859, there are some interesting references to West Indian birds.

Champlain stayed at Puerto Rico for about a month. He wrote (p. 12) "The air is very hot, and there are little birds which resemble parrots, called periquitos, of the size of a sparrow, with a round tail, and which are taught to speak: there are a great number in that isle." Presumably this refers to *Eupsittula pertinax pertinax* (Linn.) of Curaçao introduced into the island in pre-Columbian times and since extirpated, though still existing in small numbers on St. Thomas. So far as I am aware there is no other reference to this bird on Puerto Rico.

Champlain anchored at the Cayman Islands, and remained one day. He landed on one of the islands and "walked about a league inland, through very thick woods, and caught some rabbits, which are in great quantities, some birds, and a lizard as large as my thigh, of a grey and dead-leaf colour," evidently *Cyclura caymanensis*.

He also landed on another of the Caymans "which was not so agreeable; but we brought away some very good fruits, and there were such quantities of birds, that at our landing there rose so great a number, that for more than two hours after the air was filled with them: and there were others, which could not fly, so that we took them pretty easily; these are of the size of a goose, the head very large, the beak very wide, low on their legs, the feet like those of a water-hen. When these birds are plucked, there is not more flesh on them than on a dove, and it has a very bad taste."—  
*AUSTIN H. CLARK, U. S. National Museum, Washington, D. C.*

**Some Early American Bird Lore.**—For a generation or more following 1789 the geographies of Jedediah Morse seem to have been popular in the United States. A publishers' announcement even refers to an abridged edition as a *classic*. A borrowed copy of the edition of 1819 is interesting. The Sapajou and the Sagoin are "said to inhabit the country on the lower part of the Mississippi." There has evidently been little revision in the author's bird lore since earlier editions, other than the elimination of a long list of American birds. Of a number of lists of birds representing different states, Dr. David Ramsay's list from South Carolina is the longest.

Among birds listed for the United States is the Wakon Bird, "which probably is of the same species with the Bird of Paradise." The name indicates the Indians' idea of its superior excellency, it being the bird of the Great Spirit. A beautiful tail of four or five feathers, three times as long as the body and shaded with green and purple is carried "in the same manner as the peacock does his, but it is not known whether, like him, it

ever raises it to an erect position." The Wakon "is nearly the size of a swallow." The Whetsaw is listed too. It "is of the cuckoo kind . . . scarcely ever seen." Its note, like the filing of a saw, is heard in the groves during summer.

Paroquets, we are told, "are plenty in West-Tennessee chiefly in the neighborhood of salt licks," while an interesting ecological note occurs in the seeming increase of Quails or Partridges with the advance of civilization, and in the record of an Indian proverb, when they found a swarm of bees in the forest, "Well, brothers, it is time for us to decamp, for the white people are coming." Morse's naive record of the Wakon serves to remind us how few mythical birds of the Indians survived in popular lore, although the horn snake, the hoop or hump snake, and the joint snake, each perhaps tracing back to Cherokee mythology, seem almost ineradicable among certain white beliefs.

Imported European lore regarding birds has survived better. Lapwing, Milhatch, Parvee, Skirk, Swint, Lonegar, and Tontil are unscientific bird names picked up in the South. The Nightingale, the Swamp Robin, the Swamp Angel, and the Sonnet Thrash, with perhaps the Knight appear to refer to the Wood-thrush, but many even fairly well educated people do not distinguish between the Wood Thrush and the Brown Thrasher! Whether Parvee is an imitation of a bird note or a corruption of *parvus* can only be guessed. *Skirk*, however, is a medieval English word for shriek and may refer to the Shrike. This word is not found in one of the most exhaustive dictionaries published in England, so obsolete is it! *Swint* calls to mind Chaucer's *sweynt*, meaning "wearied," or *swind*, to waste away. More probably the obsolete *sven* for swallow represents the origin of this term that reappears in America, and it is probably related to *swim* and *swimble* the latter meaning to feel dizzy and perhaps to stagger. The *Lonegar* suggests the giant roe-like *Tlanuwa egwa* of Cherokee mythology, but a more probable source would seem to be "Lone Egar" the last word meaning *wander* or *stray* and in good use in the late sixteenth century English, so indicating some bird of solitary habit. *Milhatch* cannot be placed; it suggests English, but might be a corrupted Creek word. Such vernacular words, bandied about by the inaccurate one often cannot place on any specific form. Even the "Poor Job" so definitely placed by Bartram, may be a much broader term in the "Poor Joe" of the modern natives of the Carolina swamps. *Tontil* is apparently an unforgiveably slovenly rendering of "Tomtit" but may have arisen quite respectably from nasalizing the m and suppressing the d of the English Tom Tiddler used in children's games.—A. L. AND BELLE M. PICKENS, Greenville, S. C.

**Intergradations of Life Zones and Sub-species in the Southern Piedmont.**—By far the greater part of South Carolina is, paradoxically not Carolinian, but Louisianian as to life zone alignment. The Carolinian, is a very narrow fringe along the northerly boundaries of Oconee, Pickens and Greenville counties; in the area below neither zone is prominent.

In the upper Piedmont the lack of truly diagnostic forms amounts at time to a hiatus. We have here a sort of biological melting-pot. Recent measurements on a Barred Owl placed it nearer *Strix varia varia* but the partially naked toes seemed to indicate a leaning toward *alleni*. Others, on an example of Great Crested Flycatcher, placed it nearer *Myiarchus crinitus boreus* but here also was manifest an intergrading with the more southern variety. Meadowlarks in summer were once unknown here; now slightly smaller and darker birds are invading the region, plainly from the south, and a bird taken in the spring by Mr. C. J. Moody I assign to *Sturnella magna argutula* but it is too much of an intergrade to be declared pure. Reports of nesting Meadowlarks and Grackles first came from the lower Piedmont, then from the upper, being first taken in both cases for the more northerly forms, apparently with an odd hiatus in their distribution. This the sub-species extension filled, not from the north but from the south, *Quiscalus quiscula aglaeus* now being reported by Thos. D. Burleigh from Anderson county (The Auk, LI: 1, p. 90). An incoming from the mountain side is also noticed. The Eastern Phoebe (*Sayornis phoebe*) is building under bridges for the past two or three years within the city limits of Greenville, even before exclamations of surprise over the earlier invasion of Southern Robins (*Turdus migratorius achrusterus*) were stilled. Further up among the mountains the Bank Swallow (*Riparia riparia riparia*) has at last dropped across the state line, attracted perhaps by the huge vertical sand cliffs left in building the earth dam of the Table Rock reservoir. The Eastern Song Sparrow (*Melospiza melodia melodia*) is now common in summer in the lower mountains, but while our Blue Jays remain dominantly northern a specimen recently examined for the local Parker Schools Museum proved to be *Cyanocitta cristata florincola*.—A. L. PICKENS, Greenville, S. C.

**Bird Mortality on the Highways.**—The following list of 353 birds, killed on the highways was compiled on two rather extensive automobile trips through the Western States. In the summer of 1927 approximately 7,500 miles were covered while in the summer of 1929, 9,200 miles of road were traversed. All bird remains were examined and identification was attempted although in certain cases especially in Indiana through Kansas and Iowa and again on the Pacific coast the heavy traffic made the task a difficult one. The majority of the birds listed as "unidentified" were probably English Sparrows. An attempt was made to ascertain whether or not some of the Hawks, Owls and Eastern Crow might have been shot. In a few cases the condition of the specimen was such that it was impossible to be certain but no bullet holes were found in the specimens listed. Furthermore birds shot on the road are usually killed by passing motorists in direct violation of the law and such records should be included in a list of the toll taken by the highways.

A listing of the forty-two species in the order of their abundance follows:  
English Sparrow<sup>1</sup> 166, Indiana through Kansas, Iowa, Utah and Cali-

fornia; Red-headed Woodpecker 33, Indiana through Kansas, Iowa; Bronzed Grackle 6, Indiana, Kansas; Desert Sparrow Hawk 5, Utah, Arizona, California and South Dakota; Chestnut-backed Bluebird 5, Colorado; Desert Horned Lark 4, Kansas, Colorado; Short-eared Owl 3, Washington; Brown Thrasher 3, Kansas; Eastern Meadowlark 3, Indiana, Missouri; Western Meadowlark 3, Colorado, California.

Two occurrences of the following: Eastern Mourning Dove, Illinois, Kansas; Northern Flicker, Indiana, Illinois; Eastern Kingbird, Missouri, Iowa; Dusky Horned Lark, Washington; Northern Blue Jay, Kansas, Iowa; Eastern Red-wing, Kansas; Dickcissel, Kansas; Lark Bunting, Kansas, Colorado.

One occurrence of: Swainson's Hawk, Kansas; Greater Prairie Chicken, Wyoming; Lesser Prairie Chicken, Colorado; Rock Dove, Indiana; Western Mourning Dove, Wyoming; Yellow-billed Cuckoo, Illinois; Western Burrowing Owl, Kansas; Sennett's Nighthawk, South Dakota; Western Nighthawk, Arizona; California Woodpecker, California; Northern Downy Woodpecker, Kansas; Arkansas Kingbird, Kansas; American Magpie, Montana; Eastern Crow, Illinois; Lead-colored Bush-tit, Arizona; Catbird, Indiana; Sennett's Thrasher, Arizona; Eastern Robin, Illinois; Western Bluebird, Oregon; Migrant Shrike, Kansas; Gray Vireo, California; Brewer's Blackbird, Colorado; Eastern Goldfinch, Illinois; Western Lark Sparrow, Kansas. Unidentified 39. 42 Species. 353 Specimens.

It is of interest to note the comparative figures on the English Sparrow. In 1927 there were 119 specimens identified while only 47 were observed in 1929 although more miles of road were examined on the second trip. This discrepancy may be due to a decrease in the number of birds or to the fact that they are learning to avoid motor cars more successfully.—FREDERICK M. BAUMGARTNER, Cornell University.

**Use of Anaesthetics in Bird Surgery.**—I am not informed as to the extent to which anaesthetics have been used in operations on birds but the following experience may be of interest.

A White Pelican (*Pelecanus erythrorhynchos*) was brought to the museum with a badly shattered humerus. A crude attempt was made without anaesthetics to remove part of the bone and place the wing in a cast but the result was a failure as the bone failed to knit and the wound became infected. Dr. A. Wolf a surgeon was then called in and a successful operation was effected involving the amputation of the wing.

The patient was trussed up, his bill tied, and a piece of gauze placed over his eyes to protect them from ether fumes. We saturated a piece of gauze with the anaesthetic and held it over the region of his nostrils. It took six minutes to get him completely under the influence of the ether and we kept pouring ether on the cloth to keep him in a state of stupor. His heart action slowed up so that at one time it almost stopped. The cloth was hurriedly removed until he again showed signs of life. In all he was under ether almost two hours.

After cleaning the wound, removing the rotting flesh, and thoroughly disinfecting, we amputated the wing. It bled profusely so we made a rubber tourniquet to block off the blood flow. Two drains were put in and the wing sewed up with cat-gut. Then we bandaged up the stub and put the bird back in his pen. Ten minutes later he was up on his feet although a bit "groggy," so we fed him a fish or two and placed him on the roof in a small pen.

On May 22 the doctor removed the bandage, and one of the drains. We took the bird out to the estate of Mr. Wm. Taylor, in Whitefish Bay. Here we released him on the lily pond. He swam around quite contentedly and two days later we removed the second drain.

On May 31 we got a call from Mrs. Taylor to come out and do away with the bird. He appeared to be in a state of lethargy, having refused food for the entire day. He just floated on the pond with his head turned back and his bill resting on his back. Nothing seemed to move him out of his coma. On the arrival of one of our staff, however, he found the bird in apparent good health, swimming around and gobbling up ten fish that were fed him. So the bandage was removed leaving the stub of the wing exposed. From then on he improved rapidly and followed us all around the pond begging for fish. He gradually recovered the use of his leg, which we thought had been infected. As the wounds on the back healed, the use of the leg gradually returned and as far as we can see the bird is in as good a shape as ever, with the exception of the loss of one wing.—WALTER J. MUELLER,  
*Milwaukee Public Museum, Milwaukee, Wisc.*

## RECENT LITERATURE.

**Peters's 'Check-List of Birds of the World.'**—The second volume<sup>1</sup> of this notable work is before us, uniform in every respect with its predecessor and carrying us through the Alcidae in the sequence of Wetmore's classification. In other words our author has completed the "water birds" and also the "Struthious birds," the diurnal "birds of prey," and the "gallinaceous birds."

In reviewing volume I we expressed our hearty approval of the author's labors and of the plan and make up of the work and we can only endorse what we then said in praising the present volume. As most of our readers will be interested in a comparison of Mr. Peters's treatment of the North American species included in the present volume with that of the A. O. U. 'Check-List' we have carefully examined the two works side by side. As regards subspecies we find that only five of those recognized in the A. O. U. list have been rejected,—*Dendragapus obscurus flemmingi* being regarded as inseparable from *D. o. richardsoni*; *Lagopus lagopus ungavus* from *L. l. lagopus*; and *Callipepla californica plumbea* from *C. c. californica*; while *Lagopus l. albus*, and *Hydroprogne caspia imperator* are considered inseparable from the old world forms *L. l. lagopus* and *H. c. caspia* which would take their places in the list if Mr. Peters's views are accepted.

Seven additional subspecies, all but one published after the A. O. U. list was prepared are recognized viz: *Dendragapus obscurus pallidus* Swarth, from Eastern Oregon; *Lagopus l. leucopterus* Taverner, Arctic islands of North America; *Lagopus mutus captus* Peters, eastern Greenland (n. n. for *L. m. groenlandicus* Brehm); *Pedioecetes phasianellus jamesi* Lincoln, eastern Colorado; *Rallus limicola zetarius* Peters, Pacific coast (n. n. for *R. l. pacificus* Dickey); *Uria aalge inornata* Salomonsen, coasts of Bering Sea; and *Cephus grylle arcticus* Brehm, revived by Austin for birds of southern Greenland, etc.

Nine species of the A. O. U. list are reduced to subspecies of other species in Peters's work standing as follows: *Dendragapus obscurus fuliginosus*. *Lagopus mutus rupestris*, *Colinus virginianus ridgwayi*, *Haematopus ostralegus palliatus*, *H. o. bachmani*, *Numenius phaeopus hudsonicus*, *Himantopus himantopus mexicanus*, *Catharacta skua chilensis* and *Sterna albifrons antillarum*—seven of them being cases of American species made subspecies of European forms. Mr. Peters is very conservative as regards genera and nine of those recognized by the A. O. U. Committee are rejected as are also several subgenera. The genera in question are *Ionornis* united with *Porphyruia*; *Oxyechus* and *Pagolla* included in *Charadrius*; *Phaeopus* in *Numenius*; *Totanus* in *Tringa*; *Pelidna*, *Pisobia* and *Arquatella* in *Erolia*; and *Endomychura* in *Brachyrhamphus*.

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<sup>1</sup> Check-List | of Birds of the World | Volume II | By | James Lee Peters | Curator of Birds, Museum of Comparative Zoölogy | at Harvard College, Cambridge | Harvard University Press | 1934. | Pp. i-xvii+1-401. Price \$4.00.

Only four changes in names are adopted: *Laterallus* for *Creciscus*, the necessity for which has already been pointed out by Mr. Peters; *Pagophila alba* for the Ivory Gull reverts to *P. eburnea* on the grounds that Gunnerus' *Larus albus* is unidentifiable; *Hydroprogne caspia* becomes *H. tschegrava* because our author regards the latter name of Lepechin is acceptable; the generic name *Alle* Link for the Dovekie becomes *Plautus* Gunnerus, which Mr. Peters regards as recognizable, and as a consequence *Plautus* Brünnich for the Great Auk must change to *Pinguinus* Bonaterre. With the exception of the first change, which is not open to question, all of these cases have been before the A. O. U. Committee several times and one, at least has been accepted and later rejected. Such changes, back and forth, are entirely due to personal opinion and the personnel of the Committee, and, it would seem, must go on forever. It is in such cases as these that a Committee vote is more likely to produce stability than an individual opinion.

The questions of the limits of genera and of specific vs. subspecific rank are also entirely matters of personal opinion and views on many of them have shifted back and forth in the several editions of the 'Check-List' and other standard works, and will no doubt continue to shift. However it is a matter for congratulation to know that in the 262 North American species and subspecies of Mr. Peters's list only 27 changes have been found desirable by him as representing his personal opinion as opposed to that of the Committee and that only one is absolutely necessary by the Code of Nomenclature.

Besides the two mentioned above there is one other new name proposed in the volume—*Rallus torquatus limarius* for *Hypotaenidia saturata* Salvadori.

It must be the greatest satisfaction to all ornithologists, especially those in charge of large museum collections to have this admirable, up to date, résumé of the birds of the world which will prove absolutely indispensable in systematic work and our only regret is that the subsequent volumes cannot be speeded up. Our hearty congratulations and encouragement go out to Mr. Peters.—W. S.

**Roberts's 'Bird Portraits in Color.'**—Following the example of the publishers of the 'Birds of New York' and of the 'Birds of Massachusetts' the University of Minnesota has issued the plates of Dr. Roberts's 'Birds of Minnesota' in a separate volume or atlas.<sup>1</sup> We learn from the introduction that this is done in response to a growing demand for a handy set of illustrations to meet the use of the school room and the casual bird-lover; furthermore the edition of the large work is exhausted with no immediate prospect of a second printing.

Dr. Roberts has improved upon the atlases above mentioned by preparing a brief text to accompany the plates which is printed on the pages

<sup>1</sup> Bird Portraits in Color two hundred ninety-five North American species, text by Thomas S. Roberts, M. D. Minneapolis, 1934. Price, cloth, \$3.50; limp cloth, \$2.50; in portfolio without text, \$1.50. Univ. Minn. Press, Minneapolis.

facing the pictures and cleverly spaced so as to occupy just one page and to cover just the species portrayed, so that no turning of leaves back and forth is necessary. There is also a handy index. The plates figure 295 North American birds and will prove of great educational value.—W. S.

**The Ten Year Index to 'The Auk.'**—Only those who have had occasion to compile an index can have any adequate idea of the amount of labor involved in preparing one of the ten year indexes to 'The Auk' and the thanks of the Union and of ornithologists in general should be extended to Mr. Harry S. Swarth and his associates for their painstaking work on the volume<sup>1</sup> before us, which covers the ten years from 1921 to 1930.

This index is almost entirely a western contribution since Mr. Swarth's associates, in compiling the index slips—C. G. Abbott, F. N. Bassett, G. Dallas Hanna, Mrs. Elinor B. McCabe, N. P. Skinner and George Willett are all residents of the Coast as are also George S. Swarth and Mrs. Emma D. Benson who made the final copy. Dr. Herbert Friedmann checked the names of foreign species, Dr. T. S. Palmer prepared the biographical index, and Frank Bond checked over 8000 of the cross references—the two latter being veterans in the matter of 'Auk' indexes.

It is becoming more and more necessary that an observer recording a bird from a certain locality, or describing some peculiar habit or behavior, should be acquainted with what has already been written on the subject, and he may be quite unfamiliar with the method of acquiring the desired information. It is for this very purpose that these indexes are prepared. Should one be desirous of gaining information on the Prairie Warbler, for instance, by turning to that species in the index he will find volume and page reference to every mention of the bird in each state in which it has been recorded during the ten year period as well as to notes or papers on its distribution, song, migration, plumage, etc., etc. If it is a paper by a certain author that he is in search of he will find under the author's name reference either to the paper itself or to a review of it; and again, if information on the birds of a state or country is desired he will find references to every item published in 'The Auk' relative to the ornithology of the desired state, as well as to reviews or notices of papers published elsewhere. Even if one does not have a set of 'The Auk' the index is still of the greatest use as he can secure the necessary references and can then apply to someone who has the journal, to look up the information for him.

There are now four of these indexes covering forty-seven volumes and it is hoped that every member of the Union will secure the present one, if not the others, not only for his personal benefit but to aid the Society in financing the publication. If members like Mr. Swarth and his associates are willing to sacrifice their time to produce these indispensable

<sup>1</sup> Ten Year Index to The Auk Volumes XXXVIII—XLVII—1921—1930. Prepared by a Committee of the American Ornithologists' Union, Edited by H. S. Swarth. Published by the American Ornithologists' Union. Lancaster, Pa. 1934. Pp. i—xxiii + 1—328. Price, paper bound \$3.00; cloth \$4.00.

volumes there should be enough others willing to make their publication possible.

While not in any way criticising Mr. Swarth, for he was following a system set by his predecessors, we would take exception to the practice of listing the hundreds of reviews written by the 'Auk' editor, under his own name. No one would think of looking for a review under the editor's name when he can find it at once under the name of the author. If he did attempt to locate it under the editor's name he must wade through some thirty pages of titles arranged chronologically! With the elimination of these thirty pages a material saving could be effected in the cost of the index and possibly in its selling price. Furthermore the editor might be able to find references to his own publications which are now buried in this maze of reviews!—W. S.

**McIlhenny's 'Bird City.'**—This little booklet<sup>1</sup> by Mr. E. A. McIlhenny, of Avery Island, La., describes the remarkable colony of Herons, Egrets and other southern water birds which he has established close to his home and is illustrated by nearly one hundred excellent photographs of the "City," individual birds, and other interesting inhabitants of the spot.

There is an introduction by Harris Dickson and the main narrative by Mr. McIlhenny in the form of talks to his grandchildren, telling them how "bird city" was constructed and about the life history of the various water fowl that inhabit it.

He has produced an attractive little volume which cannot fail to interest all who have a love for nature and for conserving wild life, and will enlist their sympathy for the efforts to bring back all through the South the beautiful birds that millinery greed and lack of laws or their enforcement almost exterminated.—W. S.

**Brooks and Allen on the Blackbirds, Orioles, etc.**—The July number of the 'National Geographic Magazine' contains another installment of Major Brooks's excellent paintings of North American birds, covering the Icteridae, as well as the Waxwings, Shrikes and Vireos. The arrangement is very pleasing following that of Thorburn's 'British Birds' with several individual groups on a plate and tinted backgrounds.

Dr. A. A. Allen furnishes the text for this number drawing upon his wide experience for items of interest on the species covered. The additional halftone illustrations, a prominent feature of the previous installments, are, for some reason, omitted. In discussing the origin of the North American avifauna our author derives it entirely from the Old World by way of Alaska and from South America, but we wonder if a part, at least, of the alleged South American element may not be indigenous to our

<sup>1</sup> Bird City | Illustrated with Photographs Taken | by the Author | E. A. McIlhenny | Author of "Befo' De War Spirituals" and | "The Wild Turkey and Its Hunting" | With Introduction By | Harris Dickson | The Christopher Publishing House | Boston, U. S. A. Pp. 1-203.

continent even though it may have been forced southward at the time of the Glacial Period. The caption of the Cowbird plate which attributes the bird's parasitic habit to "laziness" is doubtless chargeable to the editor rather than the author. While this is a popular explanation of the peculiar habit, parasitism is hardly to be explained so easily. The ninth article covering the Ducks and Geese is promised for an early issue and will be looked for with much interest since it is with these birds that Major Brooks is at his best.—W. S.

**La Touche's 'Handbook of the Birds of Eastern China.'**—The final part of this important work<sup>1</sup> begun in January, 1925, appeared in May of the present year. In our reviews of the ten preceding parts, as they were issued, we have commented upon the excellent plan of the work and the admirable way in which it has been carried on. It only remains to say that the concluding part is quite up to the standard of its predecessors. It covers the remainder of the Anatidae and the Podicipedidae and Colymbidae with thirteen pages of corrigenda and addenda.

Mr. La Touche has completed an excellent piece of work which merits the thanks of all ornithologists who deal with Asiatic birds. The 'Handbook' will be our authority on the birds of East China for many years to come.—W. S.

**Taverner and Sutton on the Birds of Churchill, Manitoba.**—This report<sup>2</sup> on field work in the immediate vicinity of Churchill covers several expeditions made during the years 1930 to 1933. P. A. Taverner, A. C. Lloyd and V. E. Gould, representing the Canadian National Museum, in 1930; John B. Semple, A. C. Lloyd, G. M. Sutton and O. S. Pettingill representing the Carnegie Museum, and another party consisting of A. and D. Twomey, Frank Farley and H. A. McGregor, both in 1931. Mr. A. Twomey visited the spot again in both 1932 and 1933 accompanied on the latter occasion by Miss Marguerite Heydweiller.

With an interesting historical introduction and a description of the country the report passes on to an annotated list of the 142 species of birds observed. This is replete with interesting field observations and in many cases comments on specimens collected. The importance of securing the information presented in the report is evident when we learn that Churchill at the southern end of Hudson Bay and exactly at the limit of tree growth has become an ocean port and railway terminus! At the time of the authors' visits "an army of men were at work with transit, shovel and hammer and docks, round houses and elevators were being erected with feverish haste, while steam shovels leveled the inland gravel ridges and filled the marshes. A shallow lagoon where many of the

<sup>1</sup> A Handbook of the Birds of Eastern China. By J. D. D. La Touche. Vol. II, Part VI, May, 1934. Pp. i-xxii + 497-566. Price, per part 7s. 6d. net. Taylor and Francis, Red Lion Court, Fleet St., London, E. C. 4.

<sup>2</sup> The Birds of Churchill, Manitoba. By Percy A. Taverner and George Miksch Sutton. Reprinted from the Annals of the Carnegie Museum. Vol. XXIII, 1934. May 1. Pp. 1-83, pl. I-XIV.

observations on shore birds were made, is to become a switching yard and covered with oily trackage".

A colored plate of the Hudsonian Curlew, from a painting by Brooks, forms the frontispiece of the report and there are twelve plates of half-tones from photographs of birds and nests and a sketch map, forming altogether a most valuable and interesting contribution to Canadian ornithology.

A curious feature is the use of binomials only in the headings of the list following the practice of the senior author. Inasmuch as subspecific names are used in the body of the text wherever specimens have been secured (and in several cases where they were not!) it is hard to see that this practice serves any purpose except to cause annoyance and waste of time for the subsequent author who may wish to quote references under the proper subspecific headings.—W. S.

**'Birds of the Chicago Region.'**—This excellent little booklet<sup>1</sup> presents a list of the 371 species or subspecies of birds recorded from the area surrounding the southern end of Lake Michigan, and including portions of Wisconsin, Illinois, Indiana and Michigan. The character of occurrence, migration and nesting dates, and more exact data on rare forms, are given and 92 species are marked with an asterisk to indicate that they are extinct, accidental or listed on the basis of sight records only. A map and a bibliography complete the work.

We have but one suggestion to offer on the plan of the list, i. e. the use of "Transient" instead of "Migrant" for birds which pass through in the spring and autumn. The "Summer Residents" and "Winter Visitants" are also "migrants" and the more distinctive term would appear more satisfactory.

It is more than twenty-five years since the appearance of Mr. Woodruff's list covering practically the same field and with the vast increase in local bird students in that time a new publication on the subject is most welcome.—W. S.

**Ball on 'Hybrid Ducks.'**—This interesting paper<sup>2</sup> is mainly devoted to detailed descriptions of a cross between the Hooded Merganser (*Lophodytes cucullatus*) and the Golden-eye (*Glaucionetta clangula americana*) recently obtained by the author and another in the Boston Society of Natural History. He also discusses some hybrids between the Golden-eye and Smew recorded by Suchetet and a Black Duck and Mallard hybrid.

By way of introduction a list of hybrid Ducks recorded since 1907 is presented. While its date of publication is prior to 1907 we might call

<sup>1</sup> Birds of the Chicago Region. By Edward R. Ford, Colin C. Sanborn and C. Blair Coursen. Program of Activities of The Chicago Academy of Sciences, Vol. 5. Nos. 2-3, May, 1934. Pp. 1-80. The Chicago Academy of Sciences, 2001 North Clark Street, Chicago. Price 50 cents.

<sup>2</sup> Hybrid Ducks, including Descriptions of Two Crosses of *Bucephala* and *Lophodytes*. By Stanley C. Ball. Bulletin 3, Peabody Museum of Natural History, Yale University 1934. Pp. 1-26, pl. I-III.

attention to a hybrid Mallard  $\times$  Green-winged Teal in the collection of the Academy of Natural Sciences of Philadelphia (see Auk, 1903 p. 209) which cross is not mentioned in Mr. Ball's list. Three plates illustrate his paper.

Mr. Ball calls attention to the lack of detailed description in the records of many hybrids and has done a good piece of work in presenting such a careful account of the specimens which he has studied.—W. S.

**Kendeigh on 'The Rôle of Environment in the Life of Birds.'**—This voluminous paper<sup>1</sup> is too full of detailed information for adequate review in the space at our disposal and deserves careful reading by all interested in the problems which it discusses. The author has considered especially Temperature, Relative Humidity, Solar Radiation, Food, Precipitation and Wind, and in less degree Biotic Competition and Physiographic Features—all or most of them with relation to the distribution, migration and abundance of birds. The Physiology of the Temperature of birds and their resistance to low and high air temperatures is discussed including the effect of age, sex, relative humidity, light, wind, natural conditions and season on survival time—these based on experiments on English Sparrows. There is also a special discussion of the distribution, migration and abundance of the Eastern House Wren, which is the species most referred to throughout the paper, and a final Discussion and Summary reviewing the physiological processes in birds and their behavior responses; and the factors controlling distribution, migration, abundance, and the rôle of animals in ecological communities.

Quoting just a few of the author's conclusions: he considers that "the northward distribution of the House Wren during the breeding season appears to be limited primarily by low night temperatures, for which the shortening of the daily periods of darkness does not entirely compensate."

That its "wintering area is limited on the north by the low night temperatures combined with long daily periods of darkness, short daylight periods, low intensity of solar radiation, snow and lack of available food."

With regard to migration he concludes that "the northward spring migration is regulated and timed in an important manner by increasing night temperatures, decreasing daily periods of darkness, increasing daily periods of light, and increasing daily maximum temperatures. In the autumn, southward migration is regulated by decreasing night temperatures, increasing daily periods of darkness, decreasing daily periods of light, and, for some species, decreasing food supply." He adds "there is no reason to believe that the stimulus for the migration of passerine birds is due to the effect exerted by any one external or internal factor." All of this harks back in some degree to the earlier theories of migration.

We commend Mr. Kendeigh's paper to the careful study of our readers, he has certainly presented much food for thought.—W. S.

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<sup>1</sup> The Rôle of Environment in the Life of Birds. By S. Charles Kendeigh. Ecological Monographs IV, pp. 299–417. July, 1934.

**Chasen on 'Birds of Christmas Island.'**—This paper<sup>1</sup> contains a great deal of interesting information on the birds of this isolated island of the Indian Ocean. Of the seven forms of land birds four of the species of which they are races are Austro-Oriental in their relationship and are not found in Malaysia, while the other three, while they extend to this region, are also closer to Austro-Oriental forms. The author is more concerned with the distribution of the Boobies, Man-o'-war Birds and Tropic Birds which breed on the island and presents much information on them. In examining specimens of the last he finds differences in the development and age of the two long tail feathers and suggests that here may be another case similar to that found in the Hornbill (*Rhinoplax vigil*) by Dr. A. Wetmore, or at least a tendency to alternate molt. The successive plumages of *Fregata* are also discussed.—W. S.

**'Indiana Audubon Year Book—1934.'**—This annual publication<sup>2</sup> of the Indiana Audubon Society contains, as usual, a varied assortment of papers of interest both to conservationists and ornithologists. Among these we may mention an appreciation of Mr. Alden H. Hadley, with portrait and a list of his collection now at Earlham College; W. S. Blatchley contributes an account of the Indiana sand dunes; S. R. Ester discusses bird portraits on postage stamps; W. L. McAtee, the mutual relations of farms and birds; M. L. Fisher, the European Starling in Indiana; and G. Henderson presents an interesting account of bird studies in Franklin and Decatur Counties. A paper by Erastus Test is presented by his son describing a Wild Pigeon hunt in 1860 and Earl Brooks discussed the winter distribution of Robins. There are numerous local notes.—W. S.

**Williams's 'Nest Building—New Style.'**—In this interesting paper<sup>3</sup> Mr. Williams describes ten years experiments with birds on his home grounds at Roxbury, Connecticut, by supplying them with abundant nesting material in the form of bright colored woolen yarns. The Baltimore Orioles, especially, accepted the new material with avidity and not only substituted it for the usual plant fibers but built more bulky nests and eventually abandoned plant material even for the inside bottom lining. Kingbirds, Robins and Waxwings also later adopted the new material but seem to have draped it on the nest structure instead of substituting it entirely. The author discusses the matter of discrimination in colors and the apparent imitation practised by the other species after the Orioles had shown the way, also the question of instinct versus intelligent choice.

The paper is illustrated with numerous paintings and drawings by the author, some of them reproduced in colors.—W. S.

<sup>1</sup> Notes on the Birds of Christmas Island, Indian Ocean. By F. N. Chasen. Bull. Raffles Museum, Singapore, No. 8, December, 1933. Pp. 55-87.

<sup>2</sup> The Audubon Year Book 1934. Published by the Indiana Audubon Society for Conservation of Bird Life. Pp. 1-84, numerous text cuts. Price \$1.00, to Miss Margaret R. Knox, 4030 Park Ave., Indianapolis, Indiana.

<sup>3</sup> Natural History, September 1934, pp. 431-446. Journal to be had at the American Museum of Natural History. Price 50 cents.

**Sumner on Taxonomic Distinctions Viewed in the Light of Genetics.**—Prof. Sumner's work in the study of subspecies of Deer Mice (*Peromyscus*) with a view to determining the stability of so called subspecific characters is well known to our readers and in this most interesting and suggestive paper<sup>1</sup> he presents a general review of the relation of "systematics" to genetics.

The paper must be read in its entirety to understand the problem and the author's reaction to it, but we may call attention to one or two of his views. He is not at all in sympathy with the contention made by not a few geneticists, and some systematists, that "geographic variation is a process quite distinct from species formation," in other words that species and subspecies are produced in different ways and are different in character; a contention that the reviewer also has always opposed.

"So far as investigated," he says, "the peculiarities of the various geographic races or subspecies are found to be wholly genetic" and further, "that the environment may have a well marked directive influence on them [i. e. variations] is the belief of many students of distribution. The frequent parallelism between structural or pigmental gradients and climatic gradients furnishes one basis for this belief." Prof. Sumner has always been distinctly open minded with regard to the views of the systematists and it is a great satisfaction to the latter that he has made his notable experimental studies on living subspecies and a matter for congratulation that he has come to uphold many of their contentions.—W. S.

**van Rossem's Notes on Types of North American Birds.**<sup>2</sup>—On a recent visit to various European museums Mr. van Rossem has done a great service to American ornithology by examining the types of various American species preserved there. The type of *Penelope vetula* Wagler he finds to be unlike any Chachalaca known and is thus not the bird of Texas as had been recently supposed, so that the name of the latter must revert to *Ortalis v. mcallii* Baird.

The type of *Empidonax ridgwayi* Sclater proves to be *E. traillii traillii* and causes no trouble, but Lichtenstein's *Muscicapa mesoleuca* instead of being the Olive-sided Flycatcher is a species of *Elainea*, while Swainson's type of *Tyrannus borealis*, while it is an Olive-sided Flycatcher, represents the western and not the eastern form! We have therefore *Nuttallornis borealis borealis* for the western and *N. b. cooperi* Nuttall for the eastern race.

Sclater's *Pyrocephalus mexicanus* represents the more eastern form of the Vermilion Flycatcher and our author proposes to separate the California-Arizona form as *P. r. flammeus* (p. 353).

The type locality of *Corvus sinuatus* Wagler he is able to restrict to Ixmiquilpan and that of *Psarocolius cyanocephalus* to Temascaltepec while *Sylvia petasodes* Licht. is disposed of as a synonym of *Wilsonia pusilla pusilla* (Wilson).

<sup>1</sup> Taxonomic Distinctions Viewed in the Light of Genetics. By Professor Francis B. Sumner, American Naturalist, March-April, 1934. pp. 137-149.

<sup>2</sup> Notes on Some Types of North American Birds. By A. J. von Rossem. Trans. San Diego Soc. Nat. Hist., VII, No. 30, May 31, 1934.

*Psarcolius aeneus* Wagler proves to be a Red-eyed Cowbird instead of a Bronzed Cowbird, as previously supposed, so that the name of the former becomes *Tangavius aeneus aeneus* while the latter is named *T. a. milleri* (subsp. nov. p. 355).

*Tanagra auricollis* Licht. turns out to be a Long-tailed Chat which western race must now be known as *Icteria virens auricollis* (Licht.).

*Cardinalis sinuatus* Bonaparte proves to be the eastern *Pyrrhuloxia* which resumes its old name while the Arizona bird is renamed *P. s. fulvescens* (p. 356) as the type of Ridgway's *beckhami* also proves to be the eastern bird. *Fringilla epopoae* Licht. and *F. xanthomaschalis* Wagler are both disposed of as synonyms of *Guiraca melanocephala*.

The types of American Crossbill *Crucirostra minor* Brehm and *Loxia pusilla* Gloger cause all sorts of trouble since the former represents our common Red Crossbill which therefore reverts to its old name of *Loxia c. minor* while the latter is the Newfoundland race *percna* of Bent which must now be known as *L. c. pusilla*!

*Ammodramus bimaculatus* Swainson instead of applying to the Western Grasshopper Sparrow is the small dark Mexican form named *A. s. obscurus* by Nelson and the former race returns to its old name of *A. s. perpallidus* Coues.

*Passerella hyperborea* Bonaparte which Mr. van Rossem considers independent nomenclaturally from the unidentifiable *Emberiza hyperborea* of Pallas will supplant *Passerella i. insularis* Ridgw.

We have gone into detail in this notice as the items all affect the next edition of the 'Check-List' and it seems well to have them accessible in 'The Auk,' while they will also stand as an awful example of the danger of accepting names proposed by the older European ornithologists before examining and comparing their types!—W. S.

**New American Birds Proposed by van Rossem.**—Mr. van Rossem has been very active in describing new forms of birds mainly from the rich collections of the California Institute of Technology. Three races of the Black Chachalaca are proposed from Central America;<sup>1</sup> *Piranga bidentata citrea* from Chiriquí; *Passerina versicolor dickeyae* from Sonora; *Pipilo fuscus texanus* from Kerr Co., Texas; *Notharchus hyperrhynchus cryptoleucus* from El Salvador; *Claravis mondetoura inca* from Peru and *C. m. ochoterenae* from Vera Cruz; *Ceophloeus lineatus petersi* from Tamaulipas and *C. l. obsoletus* from Sonora.<sup>2</sup> The other forms of the last two genera are also reviewed.—W. S.

**Lid and Meidell on food of Ptarmigan Chicks.**<sup>3</sup>—This is a report on the crop contents of 83 chicks of "Norwegian Grouse" (*Lagopus lagopus*) taken in the field.

<sup>1</sup> Trans. San Diego Soc. Nat. Hist., VII Nos. 31–34, all May 31, 1934.

<sup>2</sup> Ibid., VIII, Nos. 2–4, August 10, 1934.

<sup>3</sup> The food of Norwegian Grouse Chicks. By Johannes Lid and Ove Meidell. Nyt Magazin for Naturvidenskaberne, bind 73, June 27, 1933, pp. 75–114, figs. 1–2, tables 1–3.

This report contains a review of previous work on the subject, a complete list of the contents of each crop, annotated systematic lists of animal and vegetable food items, and a summary by groups with percentage averages of items.

The chicks were divided into five groups according to weight: Group 1, from hatching to 25 grams (up to three days old); group 2, 26 to 50 grams (4 to 9 days); group 3, 51 to 100 grams (10 to 20 days); group 4, 101 to 200 grams (20 to 30 days); and group 5, 201 to 400 grams (more than 30 days).

As the young grow, vegetable matter increases, 47.50, 51.69, 68.11, 64.89, and 94.64 percent, while insect matter decreases, 52.50, 48.31, 31.89, 35.11, 5.36 percent—in groups 1 to 5 respectively. Forty-nine items of plant life and forty of insect life are recorded, the former in all but five cases being identified to species, the latter, in all but one instance, to the family only.

Ecological notes accompanying the annotated lists indicate which plants support desirable insect food for the chicks.

The percentages of foods are computed by weight, while wet, instead of by bulk, thus differing radically from the American method. Gizzard contents are not considered on the ground that the insect matter is too finely ground for determination.

This is the most thorough piece of work in existence on the food of Ptarmigan chicks and one of the best on the food of young of any gallinaceous bird.—LEON KELSO.

**Lockley's 'Island Days.'**—This delightful account<sup>1</sup> of an ornithologist's life on his little mile-long island off the Welsh coast will be especially interesting to American ornithologists because some of his breeding birds are of holarctic distribution, while others are very closely related to species found in North America. It gives us, for instance, intimate views of Manx Shearwaters, Storm Petrels, Oyster-catchers, Great Black-backed Gulls, Kittiwakes, Razor-billed Auks, Atlantic Murres, Puffins, and Ravens, besides casual glimpses of many other birds more or less familiar, by name at least, to Americans. Mr. Lockley's total bird-list for his island numbers 120 species, including migrants and casuals, which seems not bad for a small island boasting only one tree, and that a creeping willow, and lying two miles from the mainland. His Puffins have increased under protection to a population of more than forty thousand. He finds that the old Puffins desert their young after feeding them to the proper size, and that the young live on their own fat for four or five days and then leave their burrows at night and walk along the cliffs till they come to a favorable place to take off for their maiden flight to the sea. In the water they are never found in company with their parents but escape the Great Black-backed Gulls and other enemies by spending about half their time under water. Mr. Lockley keeps on the watch for breaches of the Oil Pollution Act, and one

<sup>1</sup> *Island Days: A sequel to 'Dream Island.'* By R. M. Lockley. With sketches by Doris Lockley and fourteen plates from photographs. London, H. F. & G. Witherby. 1934. Pp. 1-120.

of his reports resulted in a conviction and fine of £25 and costs. For the control of predatory Gulls he advocates the sterilization of their eggs as soon as laid. He has proved by experiment that after sitting five weeks on sterilized eggs a Gull loses her power to lay again in the same year. The little book is by no means confined to bird matters but it makes pleasant as well as profitable reading for the ornithologist.—F. H. A.

#### Other Ornithological Publications.

**Brodkorb, Pierce.**—A New Pitta from Palawan, Philippine Islands. (Occas. Papers Mus. Zool. Univ. Michigan, No. 279, March 23, 1934.)—*Pitta persola* (p. 1) belonging to the *P. bonapartene-sordida* group.

**Brodkorb, Pierce.**—Geographical Variation in *Belonopterus chilensis* (Molina). (Occas. Papers Mus. Zool. Univ. Michigan, No. 293, June 29, 1934.)—Four races are recognized of which *B. chilensis freiensis* (p. 12) from Magellanes, Chile, is described as new.

**Burkill, H. J.**—The Great Skua (Scottish Naturalist, July-August, 1934.)—Discussion of its activities in killing sheep.

**Clarke, C. H. D.**—Cause of Mortality of Young Grouse. (Science, No. 2071, September 7, 1934.)—Accompanied with a very high occurrence of a Leucocytozoon.

**Dale, E. M. S.**—Some 1931 Bird Notes from London, Ontario. (Canadian Field Naturalist, September, 1934.)

**Elliott, Charles N.**—Deep South Ravens. (American Forests, August, 1934.)—Account of their nesting in the Georgia mountains.

**Horlacher, W. R.**—Studies on Inheritance in Pigeons. VII. Inheritance of Red and Black Color Patterns. (Genetics, July, 1930).

**Johansson, Ivar.**—Studies on Inheritance in Pigeons. VI. Number of Tail Feathers and Uropygial Gland. (Genetics, March, 1927.)—Variations from the normal 12 feathered tail to 13 and 14 occurred and some birds lacked the uropygial gland, and in both cases this variation seemed due to an inherited tendency.

**Lewis, Harrison F.**—Notes on Birds of the Labrador Peninsula in 1931, 1932, and 1933. (Canadian Field Naturalist, September, 1934.)

**Linsdale, Jean M. and Sumner, E. L., Sr.**—Variability in Weight in the Golden-crowned Sparrow. (Univ. Calif. Publ. in Zool., XL, No. 5, February 2, 1934.)—On the basis of 464 records females in winter are lighter than males; preceding spring migration there is an increase in weight of individuals; there seems to be little daily variation due to digestion; the greatest weight is reached in late afternoon or midday; heat in excess causes loss of weight. "There is a suggestion that weight measurement offers a means of gauging response of birds to heat and of determining possible relation of this factor to delimitation of range or to initiation of migration in spring."

**Longstreet, R. J.**—Wilson's Plover. (Florida Naturalist, July, 1934.)—Based mainly on the author's observations in Florida.

**Riley, J. H.**—A New Flycatcher from Southeastern Siam. (Proc. Biol. Soc. Washington, Vol. 47, pp. 155-156, July 23, 1934.)—*Terpsiphone sababensis* (p. 155) Kao Sabab.

**Stewart, Malcolm.**—The Status of Petrels in Certain Remote Scottish Islands. (Scottish Naturalist, July-August, 1934.)—Fulmars, Leach's and Stormy Petrels.

**Watson, Aldwyn B.**—Taming the Hummingbird. (American Forests, September, 1934.)—Feeding from vial of sugar solution held in the hand.

**Wood, Norman and Tinker, A. D.**—Fifty Years of Bird Migration in the Ann Arbor Region of Michigan. (Occas. Papers Mus. Zool. Univ. Michigan, No. 280, May 21, 1934.)—Records on 212 species for 25 years are tabulated in the present paper supplementing Mr. Wood's paper on the previous quarter century published in 1906. Earliest arrival and latest departure dates only are given even in the case of transients, but as the reviewer has shown (Condor, 1906, p. 88) dates of bulk arrival are of more significance. However, the present paper is of great interest and is a "record", in length of time, for a single observer!

**Wynne-Edwards, V. C.**—Atlantic Seafowl. This little folder is published by the Cunard Line and consists of pen sketches of 25 species of birds observed by the author—who is also the artist—on several transatlantic voyages in 1933, with appropriate text. It is a very clever publication and should be of great interest and assistance to ocean voyagers.

#### The Ornithological Journals.

**Bird-Lore.** XXXVI, No. 4. July-August, 1934.

What is a Bird Sanctuary? By Mabel Osgood Wright.—Further details about Bird-Craft Sanctuary and its development.

Feathered Philosophers. By Raymond S. Deck.—A Study of Kingbirds in Connecticut; illustrated.

Our Hummingbirds. By Elizabeth L. Prowse.—An illustrated study of their nesting and feeding from artificial flowers.

Dr. A. A. Allen treats of the Starling in his bird-autobiography and there is an excellent full page plate of the King Rail on its nest by S. A. Grimes.

**The Condor.** XXXVI, No. 4. July-August, 1934.

The Primitive Persists in Bird Life of Yellowstone Park. By George M. Wright.—A pleasing and most encouraging account of the bird life.

A Wilderness Use Technique. By Ben H. Thompson.—Another account of Yellowstone and the way in which it may be maintained in its wilderness glory or spoiled by adding to human convenience and overcrowding with visitors.

Characters Differentiating Certain Species of *Stercorarius*. By George Willett and Hildegarde Howard.—The remarkable likeness of *S. parasiticus* and *longicaudus* is discussed and comparison made between their skeletons.

The Type Localities of three Birds Collected by Lewis and Clark in 1806.

By William B. Davis and James Stevenson.—Apparent locality where the actual specimen of Lewis's Woodpecker, Clark's Crow and Louisiana Tanager were obtained was about two miles north of the town of Klamath, Idaho.

**The Wilson Bulletin.** XLVI, No. 2. June, 1934.

Field Observations in Economic Ornithology. By E. R. Kalmbach.—Discusses at length (1) the difficulty in correctly interpreting the items revealed in stomach examination that are economically important, and (2) the difficulty of attempting to convert abstract percentages of bird food into terms of agricultural economies; a discussion worthy of most careful reading.

Ninety Minutes with Robert Ridgway. By Dayton Stoner.

A Hawk Census from Arizona to Massachusetts. By Margaret M. Nice.

Observations on a Few Breeding Birds in Northeastern Ohio. By John W. Aldrich.

Further Additions to the List of Birds Victimized by the Cowbird. By Herbert Friedmann.

**The Oölogist.** LI, Nos. 4 to 7. April to July, 1934.

The Short-eared Owl in Coast Rica. By Leon Kelso [April].

The Breeding Birds of Iowa. By Philip A. Du Mont.—Annotated list of 144 species [May].

Random Notes. By F. M. Jones.—Nesting of Ravens and Duck Hawk in Virginia.

**Bird-Banding.** V, No. 3. July, 1934.

Individual and Sexual Variation in the European Starling. By Lawrence E. Hicks.

A Study of Starlings Banded at Columbus, Ohio. By Edward S. Thomas.—Breed in northeastern Ohio, Pennsylvania, New York, Ontario and Quebec; winter as far south as Mississippi.

Midwinter Banding in North Dakota. By C. E. Boardman.—2648 Snow Buntings, Horned Larks and Lapland Longspurs were banded in the winter of 1933-34.

**The Cardinal.** III, No. 8. July, 1934.

The Worm-eating Warbler. By S. S. Dickey.—Twenty-four nests and eggs described and an account of the bird in Greene Co., Pa.

Notes from Brooke Co., West Virginia. By George M. Sutton.

A Second List of Books on Ornithology in the Carnegie Library, Pittsburgh, Pa.

**Bulletin of the Essex Co. [Mass.] Ornithological Club.** No. 15, December, 1933.

The Remarkable May of 1933 in Eastern Massachusetts. By Ludlow Griscom.—Claims that only exceptional years in eastern Massachusetts can compare with good years in New York and elsewhere to the south.

Ipswich River Trip 1933. By Ralph Lawson.

The Shooting Season of 1833 in Essex County. By Edward Babson.

Some Winter Activities of the Northern Shrike. By Charles W. Townsend.

Annotated List of Birds Observed During 1933. By S. Gilbert Emilio. *The Migrant*. V, No. 2. June, 1934.

The Mockingbird's Imitation of Other Birds. By George R. Mayfield.—One of the best discussions of the subject that has appeared. The writer is convinced that the Mockingbird inherits its repertory from many generations back. He divides the songs of Nashville, Tennessee, Mockers into three groups: those unlike the songs of any birds now extant; those containing imitations of the songs of birds found in other parts of the South but not near Nashville; those containing imitations of songs of birds breeding in Tennessee. Eighty percent of most Mockers' songs is of the last sort, but in some the proportion of local songs is as low as thirty percent.

The birds most frequently imitated are the Carolina Wren, Blue Jay and Cardinal, while next come the Bluebird, Tufted Tit, Martin, Red-headed Woodpecker, Flicker and Sparrow Hawk.

Summer Birds of Shady Valley, Johnson Co., Tenn. By A. F. Ganier and Bruce P. Tyler.

Also many local notes on Tennessee birds.

*Iowa Bird Life*. IV, No. 2. June, 1934.

My Neighbor of the Meadow. By Walter M. Rosene.—The Western Meadowlark.

Numerous notes on Iowa birds.

*The Nebraska Bird Review*. II, No. 3. July, 1934.

The Interior Carolina Paroquet as a Nebraska Bird. By Myron H. Swenk.

Many notes on Nebraska birds and a combined résumé of the spring migration.

*The Murrelet*. XV, No. 2. May, 1934.

John Hooper Bowles—Ornithologist. By E. A. Kitchin.—Biographical Sketch with bibliography.

Notes on birds of Washington and Oregon.

*The Gull*. XVI, Nos. 4-7. April to July, 1934.

Numerous notes on birds and bird trips about San Francisco.

Observation of a Tule Goose [April].

Arroyo Mocho Canyon Birds [July].

Behavior of Birds at Deserted Nests [May].

*The Raven*. V, Nos. 4-5, 6 and 7. April-May, June and July. [Mimeo-graphed.]

Many notes on birds of Virginia.

Some Virginia Corrections to the 1931 A. O. U. 'Check-List.' By J. J. Murray. [April-May.]

Further Additions to the Virginia Avifauna. By J. J. Murray. [July.]

*News from the Bird Banders*. IX, Nos. 2 and 3. April and August, 1934. [Mimeo-graphed.]

Interesting résumé of the work of the Western Bird Banding Association. In the discussion [April] on priority for the "Territory" theory the claims of Henry Mousley seem to have been overlooked.

**Inland Bird-Banding News.** VI, No. 2, June, 1934. [Mimeographed.] Reports on work of the Inland Bird Banding Association.

**St. Louis Bird Club Bulletin.** III, No. 6. June 13, 1934. [Mimeo-graphed.]

Records of bird observations in the vicinity of St. Louis, Mo.

**The Snowy Egret.** IX, No. 1. Summer, 1934. [Mimeographed.]

A Ten Year Anniversary number; with an annotated list of birds seen in southern Michigan in 1930-1932. By Harry W. Hann and observations in Luce County, Michigan in 1934, by Oscar McKinley Bryan.

Devoted to study of the birds of Michigan.

**The Redstart.** I, Nos. 5-7. May-July, 1934. [Mimeographed.]

Presenting the activities of the Brooks Bird Club, Wheeling, W. Va.

Many local notes and a migration list for Youngstown, Ohio.

**The Night Heron.** I, Nos. 4 and 5. [Mimeographed.]

Local bird study in the vicinity of St. Louis, Mo.

**The Ibis.** (13th series) IV, No. 3. July, 1934.

Birds of the Southern Sahara and Adjoining Countries in French West Africa. By George L. Bates.—Part IV.

On the Evidence of the existence of Two Species of Steamer Duck (*Tachyeres*). By Percy R. Lowe.—As a result of a careful study of adequate new material—embryos, young and adults—obtained by Mr. P. W. Reynolds, Dr. Lowe reaches the conclusion that there are certainly two species—physiological species though they may be—of this interesting bird.

As is generally known there is a flying and a flightless form but the former is certainly not the adolescent stage of the latter as has been claimed and there seem to be constant differences in size, relative proportions and coloration. There is however little or no difference in the anatomy even of the embryos.

The flightlessness of *T. brachypterus* as this form has been named is due, says the author, to some physiological factor which permanently retards the rate of growth of the wing to a degree that is not normal, probably the same factor which *temporarily* retards the growth of the wing in Anatidae in general. He further likens the rapid flapping progress of a Mallard chick to that of the adult Steamer Duck.

The Birds of Northern Portuguese East Africa. Part IV. By Jack Vincent.

The Biogeographical Status of the Ahaggar Plateau in the Central Sahara. By Col. R. Meinertzhagen.—As a result of his trip in 1931 the author finds that the bulk of the bird life is Palaearctic, typical of the Saharan Subregion with a strong admixture of Mediterranean forms and a slight Ethiopian element.

Birds of the Colony of Trinidad and Tobago. By Sir Charles Belcher

and G. D. Smooker.—While Dr. Chapman's list of Trinidad birds published forty years ago is frequently alluded to, curiously enough no mention is made of the excellent modern list of Mr. H. Radcliffe Roberts which moreover was published at the Government offices in Port of Spain, Trinidad! While the present paper may have been prepared prior to the appearance of Roberts's list the latter surely should have been added to the bibliography.

**A Contribution to the Ornithology of the Libyan Desert.** By R. E. Moreau.—An annotated list and discussion of migration.

**Report of the Committee on the B. O. U. List.**—Six races are added; the specific name of the Song Thrush is changed to the earlier *ericetorum* of Turton. The generic name *Carpodacus* is retained and three other proposed changes are rejected.

**Bulletin of the British Ornithologists' Club.** No. CCCLXXVIII, May 31, 1934.

Dr. Lowe exhibited and discussed hybrids between the Black Cock and the Pheasant (with additional comment in the following number).

Jack Vincent describes bird life on the islands off Cape of Good Hope.

The disappearance of *Zostera* or eel grass and its effect on the water fowl which feed upon it was commented upon. Its previous disappearance on the coasts of America has been discussed widely. D. A. Bannerman discusses the Bulbuls of the genus *Pyrrhurus* and Messrs. Harrisson and Hartley describe ten new birds from the mountains of northern Borneo. G. M. Mathews proposes as new *Pterodroma mollis madeira* (p. 161) a Madeira Petrel.

**Bulletin of the British Ornithologists' Club.** No. CCCLXXIX, June 30, 1934.

C. H. Hartley describes the sea birds of western Spitsbergen; and R. E. Cheesman the birds of Abyssinia. Messrs. Grant and Mackworth-Praed discuss races of the *Francolinus sephaena* and name one new one as well as two other new forms in the genus. Jack Vincent describes two new birds from Katanga, Belgian Congo, and *Apalis macphersoni* (p. 177) from Nyasaland. *Luscinia svecica namnetum* (p. 179) is described from western France by Noel Mayand.

**British Birds.** XXVIII, No. 1. June, 1934.

**The Breeding Habits of the Corn Bunting as Observed in North Cornwall.** By Lt. Col. and Mrs. B. H. Ryves.—A careful study of a definitely limited area revealed that 24 male birds owned 45 females and the 54 nests in the season produced 126 young. Not all the males were proven polygamous but fifteen certainly were.

There is a remarkable photograph by John Armitage of a female Skylark with young at the nest which shows the palate markings of the latter as they hold their mouths wide open.

**British Birds.** XXVIII, No. 2. July, 1934.

**Additional Notes on the Birds of Inner London.** By A. H. Macpherson.—Supplementing his article in Vol. XXII, p. 222.

Recovery of Marked Birds.—A voluminous record!

**British Birds.** XXVIII, No. 3. August, 1934.

Notes on Territory in the Dartford Warbler. By L. S. V. Venables.

The Races of the Ringed Plover. By G. Carmichael Low.—Schioeler has recognized four races: *C. h. hiaticula* Linn., southern Sweden, Denmark and coast of Germany; *C. h. major* Seeböhm, the breeding bird of Great Britain; *C. h. septentrionalis* Brehm, the Iceland race; and *C. h. intermedia* Möntræs (= *tundrae* P. R. Lowe) north Sweden, Russia and arctic Siberia. Dr. Low considers that *tundrae* is a good race and occurs in the British Isles in migration; that the larger breeding British bird and the Iceland form are not separable from typical *hiaticula*. This is the treatment already adopted in the A. O. U. 'Check-List' and apparently by Peters although he doubtfully retains the Greenland-Iceland race under the name *psammodroma* Salomonsen.

**The Avicultural Magazine.** XII, Nos. 6, 7 and 8. June, July and August, 1934.

Partridge and Bulbul Fighting in India. By Alfred Ezra.—Gray Francolins and also Red-vented Bulbuls are raised to fight just as game chickens are, by the natives, but little damage is sustained by the fighters [June].

Birds and Animals Observed During a Visit to India. By Alfred Ezra [June].

Notes on New Zealand Birds. By Sydney Porter [August].

Notes on a Collecting Trip to N. E. Tanganyika. By C. S. Webb [August].

Numerous papers on breeding birds in captivity in all three issues, and colored plates in June and July respectively of some Hummingbirds and the Royal Parrot Finch (*Erythrura cyanovirens regia*), with photographs of the Brush Turkey (*Catheturus lathamii*) and its mound, with an account of its successful breeding in England [August].

**The Oologists' Record.** XIV, No. 2. June 1, 1934.

The Birds of a Kentish Parish. By James R. Hale.—The Parish of Boxley, of which the author is Vicar, comprises 5761 acres of land and 25 of water. In this area he has found no less than 85 species of birds nesting out of 118 for the County of Kent.

Winchats. By George J. Scholey.—With photographs.

**Bird Notes and News.** XVI, No. 2. Summer, 1934.

Bird Notes from Majorca. By Charles E. Alford.—Interesting account of a trip to the island and resentment against the killing and eating of Skylarks and other small birds.

The Pace that Kills. By R. M. Lockley.—Protest against the destruction of birds by automobiles which seems to be even greater in England than in America.

There are many notes on conservation and bird protection which is the real field of the journal.

**The Emu.** XXXIV, Part 1. July, 1934.

Notes on the Genus *Orthonyx*. By George Mack.—With colored plate from painting by Cayley.

Birds of the Comboyne Plateau. By E. C. Chisholm.—On the central north coast of New South Wales. Some 115 species of native birds have been recorded in the past ten years; the temperature ranged from 30 to 104 and snow has fallen twice; 137 species of trees are found on the plateau of which sixteen are Eucalypts.

A Survey of the Bird-fauna of Certain Islands of the Whitsunday Passage, North Queensland. By A. J. Marshall.

Further Remarks, Measurements etc. on the Lotus-bird. By E. A. D'ombrian.—There is another article on this Jacana by Ken. Cobcroft, and still a third by K. A. Hindwood, the last criticizing the suggested conscious camouflage in the bird's changing the color of its wattle from red to yellow when on the nest, to match the yellow flowers which often surround it! While the change of color does take place it is Mr. Hindwood's experience that it is gradual and seasonal. There is an interesting photograph of a young dead Jacana removed from the egg, showing the enormous feet of the chick.

There are many other notes and papers on the habits of various Australian birds.

**The South Australian Ornithologist.** XII, Part 6. April, 1934.

Numerous lists of South Australian birds and local notes.

A photograph illustrates the enormous development of the trachea of the female Painted Snipe (*Rostratula australis*) which travels between the skin and the breast muscles back and forth twice, before entering the throat, making its length four times that of the body.

**L'Oiseau.** IV, No. 2. 1934. [In French.]

Geographic Variation and Migration of the Wheatear. By Finn Salomonsen.—Recognizes three races: *Oenanthe oenanthe oenanthe* of Europe which winters in Africa; *O. o. leucorrhoea* of Greenland, which migrates to western Europe and Africa; and *O. o. schioeleri* of the Faroes which migrates to Europe.

Ornithological Notes During a Trip to Brazil. By J. Berlioz.

*Systema Avium Rossicarum.* By S. A. Buturin and G. P. Dementiev (Continued).

The Birds of Kwangsi. By K. Y. Yen (Continued).

Ornithology of Basse-Bretagne. By E. Lebeurier and J. Rapine.—Bibliography and collections in local museums.

The Influence of Territory in the Life of Birds. By Guy R. Mountfort.

Ornithological Observations in Southern Algeria, 1923-1933. By Ch. Arnault.

The Double Daily Rejection of Pelets by *Bubo bubo ascalaphus*. By C. G. Carpentier.

Several notes on aviculture.

**Alauda.** (Series III) No. 2. April-June, 1934. [In French.]

Extract from the Journal of Ornithological Observations at the Port of Geneva, 1933. By Prof. Robert Pancy.

On the Partridge (*Perdix*). By L. Lavauden.—Largely historical.

Notes on Birds Observed in 1932-1933 at L'Etang de Biguglia in Corsica. By B. Mouillard.

Ornithological Report for Tunis for the Year 1933. By G. de Guirtchitch.

A Glance at the Avifauna of the Causses. By N. Mayaud.—A plateau region of south central France.

**Journal für Ornithologie.** Jahrgang 82, Heft 3. July, 1934. [In German.]

At the Nest of the Black-throated Grebe. By Walter Wüst.—With beautiful and artistic photographs of *Podiceps n. nigricollis*.

The Red-wing (*Turdus musicus coburni*) as a Town Bird. By Gunter Timmermann.

Nests and Eggs from Damaraland. By W. Hoesch.—Sixteen species described, with several photographs.

On the Larger Gulls. By B. Stegmann.—This is a detailed résumé of the larger Gulls of the world, with rather startling conclusions. Only five species are recognized but under these are arranged thirty subspecies. Of the North American forms *L. glaucescens* is made a subspecies of *hyperboreus*; *L. schistisagus*, *occidentalis* and *livens* of *marinus*; *L. leucopterus* and *californicus* of *argentatus*; and *L. delawarensis* of *canus*. *L. o. wymani* and *L. f. graellsii* are not recognized. We cannot see any advantage in uniting all of these forms under a few specific groups, too much "lumping" is just as objectionable as too much "splitting." It is significant that Mr. Peters's independent survey of these birds resulted in exactly the same treatment as that adopted by the A. O. U. Committee which was reached before he became a member of it.

A Bird Collection from Kwei-chow. By K. Y. Yen.—A collection made by Mr. Ho and comprising 131 species of which *Paradoxornis alphonsonia stressemanni* (p. 383) and *Cinclus pallasi sini* are new, the latter described in a former paper.

A Study of the Tongue Apparatus in Indian Woodpeckers. By J. Steinbacher.

Bird Life and Migration on the [Italian] Island of Pantelleria. By Otto Steinfatt.

Changes in the Status of the White Stork in Upper Silesia. By M. Brinkmann.

On the Forms of *Myiagra caledonica*. By Finn Salomonsen.—Five races recognized of which *M. c. marinae* (p. 437) is described as new.

The Dependence of Lipochrome Coloring in Birds upon Vegetable Carotinoide. By Otto Völker.

**Ornithologische Monatsberichte.** Jahrgang 42, No. 3. May-June, 1934. [In German.]

Breeding Biology of *Phylloscopus bonelli*. By Fritz Heilfurth.

*Lamprocolius nitens bispecularis* as a Host Bird for *Clamator glandarius*.

By W. Hoesch.

Observations on the Breeding Biology of the Laro-Limicolae. By Franz X. Graf-Zedtwitz.

On the Systematic Position of *Phylloscopus lorenzii*. By B. Stegmann.

On Four of the New Guinea Muscicapidae Described by DeVis. By Wilhelm Meise.—*Gerygone murina* = *Acanthiza murina*; *Rhipidura oreas* = *R. rufiventris gularis*; *Poecilodryas nitida* = *Monarcha chrysomela aruensis*.

Our Knowledge of the Stomach of Flower Seeking Parrots. By G. Steinbacher.—With diagrams of the stomachs of seed eating and pollen and honey-eating species.

In 'Short Notes' there are described by G. Schiebel *Carduelis c. bruniventer* and *Certhia brachydactyla siciliae* (both p. 86), from Sicily; and by H. Grote, *Buccanodon anchetae stresemanni* (p. 86) from Kitungulu-Urungu, and *Serinus mozambicus gertrudis* (p. 87) from Usambars, "German East Africa."

**Ornithologische Monatsberichte.** Jahrgang 42, No. 4. July-August, 1934. [In German.]

New Observations on the Drausensee at Elbing [Germany]. By E. Schüz.

Two New Weaver Finches from Southern New Guinea. By E. Stresemann.—*Lonchura nevermanni* (p. 101) and *L. stygia* (p. 102).

On the Life History of *Scardafella i. inca* in Mexico. By Fritz Heilfurth.

*Pycnonotus tricolor naumanni* (p. 116) and *Cisticola natalensis matengorum* (p. 117) are described in 'Short Notes' by W. Meise, from German East Africa.

**Der Vogelzug.** Jahrgang 5, No. 3. July, 1934. [In German.]

Statistical Investigation of Relation of Sex in Ducks to Migration Time. By H. Frieling.

The Migration of Waxwings in 1932-1933. By W. Küchler.

Migration of the Black-backed Gull (*Larus f. fuscus*). By E. Schüz.

Migration of the Song Thrush (*Turdus ph. philomelos*). By W. Eichler.—With interesting maps.

On the Wintering in East Holstein of *Larus r. ridibundus*. By B. Resuhr and W. Albertsen.

**Beiträge zur Fortpflanzungsbiologie der Vögel.** Jahrgang 10, No. 4. July, 1934. [In German.]

Robin Courtship. By L. Dobbrick.

On the Breeding Biology of *Nyroca ferina* and *Spatula clypeata*. By W. Wüst.

Fifth and Sixth Years Observation of the Birds of Prey of the Wooded Regions of North Germany. By V. Wendland.

Breeding of *Hirundo tahitica frontalis*. By O. Meyer.

**Die Gefiederte Welt.** Jahrgang 63, Nos. 29 and 32, July 19 and August 9, 1934. [In German.]

A journal devoted to aviculture; with many notes on cage birds and illustrated with halftones.

**Der Ornithologische Beobachter.** Jahrgang 31, Heft 9, 10, and 11. June, July, August, 1934. [In German.]

Sketches of the Life of the late Alfred Schifferli with portrait. By U. A. Corti and H. Noll [June].

A Contribution to our Knowledge of the Parasites of Our Birds. By H. Wegelin.—With numerous figures, and list of species for each bird [August].

Numerous notes on the birds of Switzerland.

**Archives of Swiss Ornithology.** I, Fasc. 4. April, 1934. [In German or French.]

Completion of the article on the Cevennes and the Massif Central. By O. Meylan.

Further Contribution to the Spring Passage of the Graubunder Alps. By F. Heilfurth.

**Ardea.** XXIII, Af. 1-2. June, 1934. [In Dutch or German.]

The Ornithology of the Prinsenhof in Omgeving, Friesland. By G. A. Brouwer.

On the Black Stork. By F. E. Stoll.—With beautiful photographs.

On Breeding birds of 1933. By G. A. Brouwer and F. Haverschmidt.

On Francois Legvat and his "Voyage et Avantures" with remarks of the Dugong of Rodriguez and on *Leguatia gigantea* Schlegel. By Th. Mortensen.

**Ornis Fennica.** XI, No. 2. June, 1934. [In Finnish and German.]

Some Leading Features of the Regional Distribution of Breeding Birds of the Lake Country of Kokemaenjoki. By O. Cajander

**Koksag.** VI, Szam 3-4. 1933. [In Hungarian and German.]

A Contribution to our Knowledge of the Bird Life of Petsamo and Finnish Lapland. By Ivar Hoetling.

Contributions to our Knowledge of the Food of the Waxwing During its Winter Sojourn in Hungary. By E. Greschik.

## OBITUARIES.

EDUARD DANIEL VAN OORT, Director of the Royal Museum of Natural History in Leiden, died at Leiden, September 21, 1933, at the age of 57. He was born at Barneveld, Holland, October 31, 1876 and at an early age became interested in nature and especially in birds. His interest in biology was stimulated by his instructors in the Secondary School at The Hague and later at the University of Leiden. From 1900 to 1904 he was assistant to the Director of the Royal Geological and Mineralogical Museum and aided in arranging the collection of fossil mollusca, a position which gave him valuable training in museum administration.

Dr. Van Oort received his Ph.D. degree at Bern in 1904 and shortly after was appointed Curator of the Royal Museum of Natural History. In 1915 he was made Director and continued in this position until his death. His efforts were directed not only toward building up the study collections—already among the most notable in Europe—but he was desirous also of developing an exhibit collection, an ambition which, however, he did not live to realize.

He was greatly interested in bird migration and when appointed Professor of Zoology in the University of Leiden, in 1920, his inaugural address was devoted to 'The Migration of Birds and the Present Position of its Experimental Research.' As early as 1911 he introduced bird banding in Holland and later assisted in establishing the banding stations at Wassenaar and Texel. Under his leadership, by 1930, more than 100,000 birds had been banded and the annual reports on banding published by the Museum contained a wealth of information on migration and distribution. He was the author of numerous systematic papers on birds but his great work 'Ornithologia Neerlandica,' in five volumes, was unfortunately still incomplete at the time of his death. It was his intention to prepare also a similar work on the mammals of Holland but this project was never carried out.

Van Oort was said to be somewhat cool and reserved, extremely modest and honest to a fault. His attainments received recognition at home and abroad in his appointment on several Royal commissions and his election as a Corresponding Member of the Zoological Society of London, Honorary Member of the British Ornithologists' Union, Corresponding Fellow of the American Ornithologists' Union in 1913 and Honorary Fellow in 1919.—T. S. P.

PERCY EVANS FREKE, a Corresponding Fellow of the American Ornithologists' Union, elected in 1883, whose death has only recently been reported, died at Folkestone, England, March 20, 1931, at the advanced age of nearly 87.

He was born in Dublin, Ireland, July 12, 1844, and when 21 years of age enlisted in the 44th Essex Regiment. Two years later, in 1867, he

exchanged into the 18th Royal Irish Regiment and after serving two years in New Zealand retired from the army and returned home. In 1871 he served in the Royal Queens County Rifles (Militia) until he left for America in the following year. Upon his return in 1879 he received an appointment on the Irish Land Commission, a position which he held for a number of years until ill health due to over work compelled his retirement. Leaving Ireland in 1899 he took up his residence in England, at Folkstone, in Kent, where he passed the remainder of his life.

For seven years, from 1872-1879, Freke operated a tobacco plantation in Amelia County, Virginia, about 30 miles southwest of Richmond. Here he made the observations which were later incorporated in a list of 112 species of the birds of the County (see review in B. N. O. C., 1882, p. 48). He was always a great lover of nature and his sojourn in Virginia apparently stimulated his interest in birds and resulted in the publication of several important papers, three in the 'Proceedings of the Royal Dublin Society' and one in the 'Zoologist.' All are reviewed in the 'Bulletin of the Nuttall Ornithological Club' for 1880 to 1883. In later years his interest seemed to have been in entomology rather than in ornithology. Beside the list of Amelia County birds, the other papers of special interest to American readers include a 'Comparative Catalogue of Birds found in Europe and North America' (1880), 'North American Birds Crossing the Atlantic,' and 'European Birds observed in North America' (1881). This last paper containing a list of 56 species, may be regarded as a counterpart of Dalgleish's 'List of Occurrences of North American Birds in Europe' (B. N. O. C., 1880). Both of these lists are of permanent value and it is highly desirable that they should be brought down to date.—T. S. P.

WILLIAM DAVID KERR MACGILLIVRAY, a Corresponding Fellow of the American Ornithologists' Union since 1922, and tenth President of the Royal Australasian Ornithologists' Union, died at Broken Hill, New South Wales, June 25, 1933. He was the third son of George and Janet (Haxton) MacGillivray and was born at Kallara Station, on the Darling River, New South Wales, November 27, 1867. About three years later the family moved to Eastern Creek, a tributary of the Flinders, in Queensland, where his early years were spent amid primitive conditions and where he early developed an interest in wild things and began a collection of natural history specimens.

At the age of ten he was sent to school at St. Kilda Scotch College near Melbourne, where he graduated in 1885. Five years later he received his degree in medicine. All through these years his spare time was devoted to observing and collecting birds. He began to practice in 1890 in various places in Victoria and after a few months at Launceston, Tasmania, returned to Melbourne. After his marriage, in 1895, MacGillivray resided in Coleraine and Hamilton, Victoria, but later on removed to Broken Hill, New South Wales, where he practiced during the rest of his life. During

the war he enlisted in the Australian Medical Corps and served as a Major in France.

Upon his return to Broken Hill he became interested in the Great Barrier Reef and made numerous excursions to many of the islands to study shore birds and other migrants.

Dr. MacGillivray was described as amiable, quiet and reserved in manner; he disliked publicity and was a stickler for facts and a hater of shams. He published about 20 papers on birds in 'The Emu,' several articles for the Barrier Reef Commission, and at the time of his death was preparing a book for use in the schools on Australian birds. Further details in regard to his activities may be found in the 'Austral Avian Record,' Vol. III, 1919, and 'The Emu,' for Oct., 1933, pp. 144-148.—T. S. P.

MRS. MABEL OSGOOD WRIGHT, who was elected an Associate Member of the American Ornithologists' Union in 1895 and a Member in 1901, died at her home in Fairfield, Conn., on July 16, 1934, in the seventy-sixth year of her age. For the past six years ill-health had curtailed Mrs. Wright's activities, but for the preceding third of a century she was a leading figure in educational and conservational ornithology. Her early election to Membership in the A. O. U. is an indication of the position she had reached in this field.

The daughter of Dr. Samuel Osgood, a prominent divine of his day, by inheritance, environment, and training, Mrs. Wright was exceptionally equipped for her life-work. A born nature lover she early made birds a part of her life. A gifted writer, prompted by an active, constructive mind to express herself, her familiarity with literature is reflected in both the form and content of her writing. Tradition, however, exercised no curb on her originality or prevented the development of her individuality. Open-hearted, broadminded, unswayed by personal motives, unquestionably genuine, she approached every problem with so obvious a desire to reach a solution that would serve the highest aims that she won the esteem and admiration even of those from whom she differed. It was, indeed, the courage with which she "spoke" her well-balanced mind that made Mrs. Wright one of the most effective and valued members of the numerous boards and committees on which she served. Deeply moved by sentiment she was even more strongly controlled by sense. Her judgment was based on practical, rather than poetical or personal considerations. Hence her success whether as gardener, bird-student, conserver, writer, organizer or administrator.

Mrs. Wright's attitude toward nature is well expressed in the titles of two of her books, 'The Friendship of Nature' (1894; her first book) and 'Citizen Bird' (1897). The first shows a loving intimacy with the world of birds and flowers

"And the round ocean and the living air,  
And the blue sky and in the mind of man";  
the second is an eloquent advocate of birds' rights.

This latter book was written in conjunction with Elliott Coues, and it has the honor of being the first work effectively to present Louis Fuertes to the world as an inspired painter of birds.

'Birdercraft,' Mrs. Wright's first bird book, issued two years before 'Citizen Bird,' was one of the successful popular manuals of its day. A later edition was also illustrated by Fuertes. In addition to other bird and nature books, largely addressed to young people, Mrs. Wright was the author of a number of novels and, from its birth in 1899 to the day of her death, she was on the editorial staff of 'Bird-Lore.'

As an organizer, councilor and administrator, Mrs. Wright played a part of the first importance in the history of bird protection. She was responsible for the formation, in 1898, of the Connecticut Audubon Society, one of the most active and successful of State Audubon Societies, and served as its president from that date until 1925. She was a director of the National Association of Audubon Societies from its organization in 1905 until 1928, when failing health forced her resignation.

But it is in Birdercraft Sanctuary, near her home at Fairfield, that one finds the most convincing demonstration of Mrs. Wright's sound judgment in catering to the wants of Citizen Bird and at the same time making him known to his human contemporaries.

In 'Bird-Lore' for August, 1915 and 1934, Mrs. Wright tells the story of Birdercraft. It should be read by everyone who would make birds and flowers a part of community life. From most unpromising beginnings, these ten acres have become a common meeting-ground for birds and man; a sanctuary for the former, a source of pleasure and information to the latter, and a monument to the mind that conceived and developed it.—F. M. C.

EDWARD JOHNSON BROWN, an Associate of the American Ornithologists' Union, died at Eustis, Florida, February 14, 1934, at the age of 67. He was the son of Samuel K. and Ann Watson Brown and was born in Philadelphia, Pa., October 4, 1866. Many years of his life were spent in Washington, D. C., where for some time he was engaged with his father in the furniture business.

In 1891 Brown was elected an Associate of the Union and in 1931, after 40 years membership, was designated an Honorary Life Associate. He collected regularly in the vicinity of the District of Columbia during the nineties, and from 1909 to 1917, adding several important records to the local list of birds. One of his earlier expeditions was made to Smith's Island, Va., in May, 1894, and a brief account of the trip, with a nominal list of 63 species observed, was published in 'The Nidiologist' (I, p. 144, 1894). In February and March 1895, he accompanied Robert Ridgway and William Palmer to Florida and spent three weeks collecting a few miles above Fort Kissimmee. The following year he collected in Osceola County, Fla. These trips aroused an interest in Florida which resulted in his removal to the State in 1898 on account of his health, and for ten years

he resided at Lemon City engaged chiefly in the cultivation of semi-tropical fruit. He then returned to Washington, and, in 1917, moved to Los Angeles, Calif., where he continued to collect for several years. In 1923 he again returned to Florida and finally made his home at Eustis.

Brown was a keen, careful collector, well acquainted with the habits of the birds he had met in the field. He was especially interested in water birds and shorebirds and possessed an almost uncanny knowledge of the field marks and habits of shorebirds. Retiring and quiet in manner, he rarely spoke in public and unfortunately published only a few brief notes, but was always generous in placing his observations at the disposal of others. Most of his birds are now in the U. S. National Museum. He was a member of the Biological Society of Washington and a Life Member of the Cooper Ornithological Club. In recognition of his work the western form of the Least Tern was named in his honor by Dr. E. A. Mearns, and in January, 1917, he was made an Honorary Collaborator in Zoology of the National Museum. His ashes are interred in Glenwood Cemetery in Washington.—T. S. P.

ARTHUR PERCIVAL STUBBS, an Associate of the Union since 1922, died suddenly at his home in Lynn, Mass., July 19, 1932, in his 66th year.

He was born and brought up in Winterport, Maine, eventually graduated from Bucksport Seminary and then from the Massachusetts College of Pharmacy, in Boston. For the remaining forty odd years of his life he was a druggist, in Ware and Boston for a few years, but in Lynn, Mass. continuously since about 1900.

Stubbs acquired more than a smattering of botanical lore and he was interested too in geology, but for the last thirty years birds were foremost in his mind and nearly every available minute in-doors and out he used as best he could to further his knowledge of ornithology, handicapped, during his later years at least, by about the longest working hours of any man I ever knew. A Charter Member of the Essex County Ornithological Club, which was formed in 1916, he labored unceasingly for its welfare and performed a prodigious amount of painstaking and more or less tedious work in the time he had, as Recorder for the organization and as a member of the editorial committee. He was an Active Member also of the Nuttall Ornithological Club.

Stubbs wrote little for publication outside of the pages of our club Bulletin but did for a time contribute monthly articles for the Salem 'Evening News' and he also sent a few notes to 'Bird Lore' and to 'The Auk.' Mr. Forbush and Dr. Townsend esteemed him as a correspondent. His most pretentious effort, in which I had the honor and privilege of co-operating, was a 'List of the Birds of Essex County, (Mass.),' which was published in the Club's 'Bulletin' for 1931.

Afield, Stubbs was an ideal companion, always alert, never complaining. He was a most kindly, unassuming, gentle, man.

His wife, an unmarried daughter, a married daughter and a son survive him.—S. G. EMILIO.

RICHARD GILLESPIE, an Associate of the American Ornithologists' Union since 1930, died at Bay City, Michigan, March 10, 1934, and was buried at Lansing. He died in the 65th year of his age having been born in the Province of Ontario, September 24, 1869. His education was received at Hamilton, Ontario, and much of his later life was devoted to teaching in commercial colleges. During recent years he had been connected with the Bay City Business College.

Gillespie was a lover of nature from early youth and was much interested in wild life and its conservation. He is described as "ever ready for a tramp in the fields or woods, and always with a sprightly step, a keen eye and a boyish enthusiasm that belied advancing years." Apparently he did not become affiliated with ornithological work until after the age of 50. About ten years ago he joined the Iowa Ornithologists' Union and later, at the Salem meeting, the American Ornithologists' Union. Unfortunately he was one of those who published little or nothing on birds and his observations were consequently not preserved except as they may have been communicated to his friends or those with whom he came in contact.

For the foregoing facts we are indebted to a brief sketch by F. J. Pierce in the June number of '*Iowa Bird Life*'.—T. S. P.

ALFRED CROWELL WESTON, an Associate of the American Ornithologists' Union, elected in 1931, died at Princeton, Massachusetts, November 11, 1933, from the accidental discharge of a shotgun in the hands of a hunting companion. He was born October 24, 1892, in West Roxbury, Boston, Massachusetts, and was educated in the West Roxbury High School and the Boston Latin School. In the World War he served at Camp Devens and in guarding interned enemy aliens at Lancaster, Massachusetts. He married Edith M. Savage, of Wellesley, Massachusetts, October 3, 1925, and after a little over a year at Wellesley made his home in the adjoining town of Needham. He became interested in birds when a small boy, and a visit to California in 1913 increased this interest. His carefully kept collection of birds' eggs, which numbered about two hundred and forty sets representing one hundred and fifteen species, has been presented to the Children's Museum in Boston. These eggs were all collected by Mr. Weston himself in New England and chiefly in Massachusetts. In 1932 and 1933 Weston spent a number of days in the field with Mr. A. C. Bent, who found him a keen and enthusiastic collector as well as an agreeable and helpful companion.—F. H. A.

*Erratum.* In the notice of Col. Franklin Brandreth, which appeared on pp. 432-3 of this volume of '*The Auk*', the following alterations should be made. The date of his birth should be March 25 instead of "May 25" while he was in his seventy-seventh year not "seventy-eighth."—A. K. FISHER.

## NOTES AND NEWS.

MEMBERS who have returned from Oxford report that the Eighth International Ornithological Congress which met in July was a highly successful gathering. The A. O. U. was represented by President J. H. Fleming, Vice-president Herbert Friedmann, Ex-president Alexander Wetmore, and several other members from America including A. R. Brand, Ludlow Griscom, Ernst Mayr, Alden H. Miller, Mrs. M. M. Nice, T. Gilbert Pearson, Tracy I. Storer and W. E. Clyde Todd.

FRANK BOND, a Member of the U. S. Geographic Board since 1903, and chairman for the past nine years, retired from Government service July 31, 1934. For many years Mr. Bond was connected with the General Land Office in the Department of the Interior but was never too busy to take an active interest in bird protection. He prepared many of the early Executive Orders creating Federal Bird Reservations and conceived the idea of establishing such refuges on a number of Reclamation Projects in the West. He has also taken an active part in the work of the Union and just prior to his retirement assisted in reading the proof of the 'Ten Year Index to The Auk' by laboriously checking some 8000 cross references. Now that he is free from Departmental routine, we hope that he will have more time for bird work and the things in which he is especially interested.

THE WATERFOWL of America are facing a crisis, W. C. Henderson, associate chief of the U. S. Biological Survey, told the International Association of Game, Fish, and Conservation Commissioners at their annual meeting held in Montreal, Canada, September 10 and 11.

"Last year," said Mr. Henderson, "more birds were killed than were produced, and since then breeding conditions have shown no improvement. The drought of 1934 has been the severest ever recorded by the Weather Bureau, and its worst effects have been felt in the areas that formerly constituted important breeding grounds for many of the highly prized species of our wild Ducks. Several naturalists of the Biological Survey studied conditions in Canada this season and each found the breeding stock there insufficient to occupy even the comparatively small areas still favorable for nesting."

In spite of this condition Duck hunting is to be permitted this fall and while the season has been shortened so far as total number of days is concerned the states may determine whether to have the shooting days continuous or spread out over a longer period. Baiting under permit is also allowed. It would seem that those in charge do not realize the seriousness of the situation and for some reason do not wish to enforce a close season. As pointed out by Mr. McAtee, Duck hunting is a luxury not a necessity. Are the Ducks to go the way of the buffalo and the Wild Pigeon?

We are informed by H. A. Carter, State Zoologist of Georgia, that "flagrant misuse of privileges extended to scientific collectors in Georgia has led Commissioner Zack D. Cravey to order the suspension of all ornithological collecting in Georgia for a period of twelve months effective July 1, 1934." It is not the purpose to stop completely the necessary work of this nature in the state. The Department would be glad to have statements from ranking ornithologists setting forth their ideas of what problems should be considered in connection with collecting in Georgia. These problems will be tabulated and at the expiration of this twelve months ban, permits will be issued to those who care to pursue them.

Along the same line the U. S. Biological Survey has decided that it will no longer issue permits for the collection of migratory birds for scientific purposes to extend beyond June 30 of any year, and after carefully reviewing its list of permittees, those whose qualifications cannot be questioned will be furnished with permits to be reissued annually on and after July 1, 1935.

**THE TORONTO ORNITHOLOGICAL CLUB.**—On January 5, 1934, the organization meeting of the Toronto Ornithological Club was held at the Biology building of the University of Toronto.

The aim of the Club is to further the study of Ornithology in the Toronto region and the membership is therefore limited to those more seriously interested in the subject.

Meetings are held at the Central Y. M. C. A. on the first Friday evening of each month; twenty men constitute the charter membership including James Henry Fleming as an Honorary Member.

Further information may be obtained from Hubert Richardson, Secretary, 182 Rusholme Road, Toronto, Ontario, Canada.

We would make a last minute appeal to all members of the A. O. U. who have not already made arrangements to attend the annual meeting in Chicago to do so at once. We are counting on the members of the Middle West to make this meeting a memorable one as it offers them an opportunity of participating in an A. O. U. meeting and making the personal acquaintance of the many members from the East who will be present and who expect, in turn, to meet many of their correspondents from the Central States who have been unable to come East.



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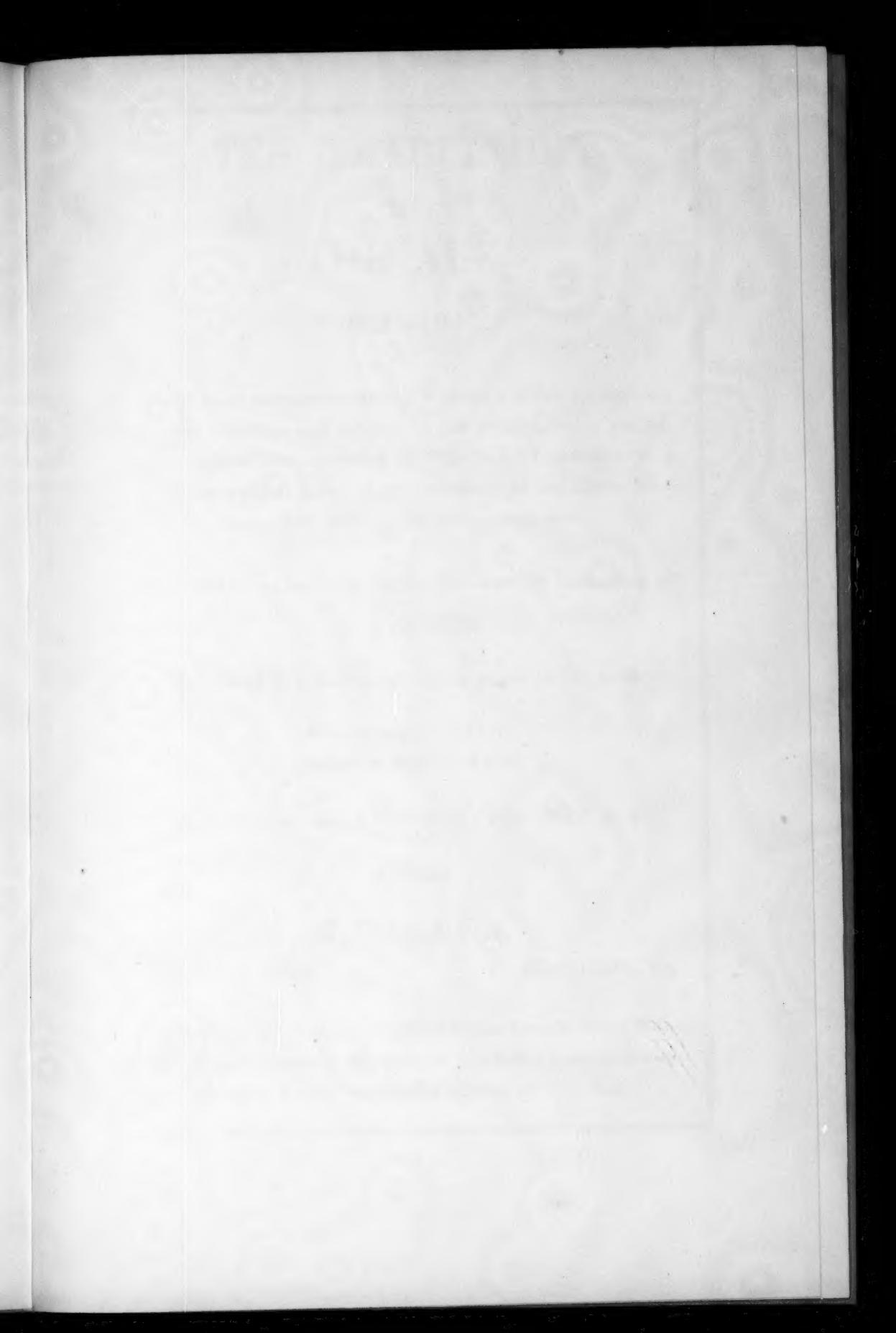
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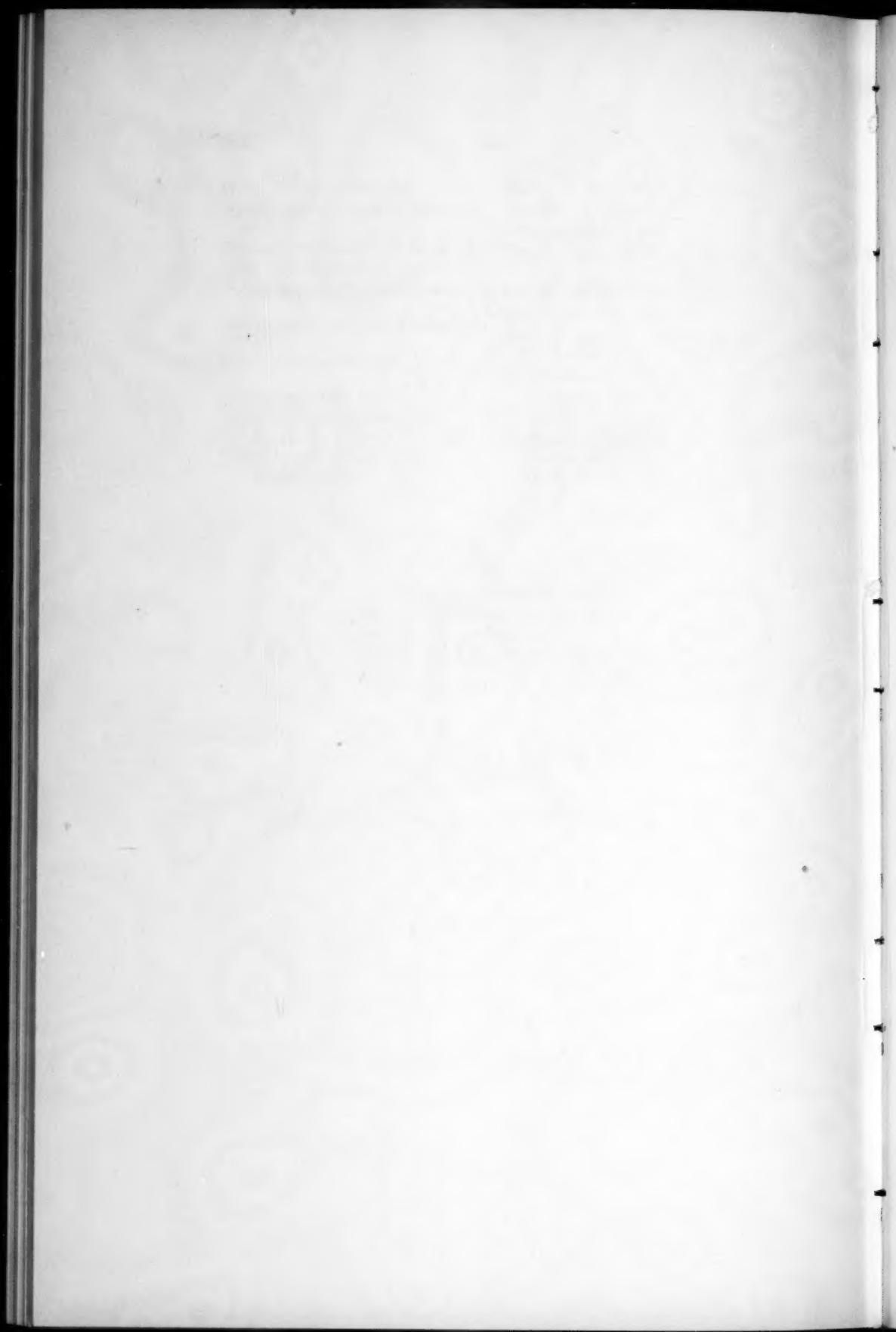
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5	1887, Oct. 11-13	1st Boston	17	284
10	1892, Nov. 15-17	4th Washington	20	557
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16	1898, Nov. 14-17	6th Washington	21	695
17	1899, Nov. 13-16	1st Philadelphia	16	744
18	1900, Nov. 12-15	4th Cambridge	19	748
19	1901, Nov. 11-14	8th New York	18	738
20	1902, Nov. 17-20	7th Washington	25	753
20a	1903, May 15-16	1st San Francisco	7	—
21	1903, Nov. 16-19	2d Philadelphia	19	775
22	1904, Nov. 28-Dec. 1	5th Cambridge	17	808
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25	1907, Dec. 9-12	3d Philadelphia	20	850
26	1908, Nov. 16-19	6th Cambridge	17	888
27	1909, Dec. 6-9	10th New York	19	866
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31	1913, Nov. 10-13	11th New York	28	992
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34	1916, Nov. 13-16	5th Philadelphia	26	830
35	1917, Nov. 12-15	8th Cambridge	21	891
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